

# small air forces observer

ISRAELI TWO-SEAT SKYHAWKS  
ARGENTINE CIERVA C.30  
SPANISH CIERVA C.30  
AUSTRALIAN SKYHAWKS  
NORWEGIAN N-3PB  
CAMBODIAN T-28

US \$1.75



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# small air forces observer

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**TBU #58, SAMOLOT MYSLIWSKI SPITFIRE Mk I-V**, K. Chołoniewski. 20 pages 6 1/4 by 9 1/4 inches, 14 photos, 14 color side views, and one color 4-view drawing. Spitfires in Polish Squadrons. \$2.25.

**BACK ISSUES:** New subscriptions begin with all issues of the volume current at the time payment is received. Back issues, when available, are \$1.00 each with postage extra. (Issues #1 through #9 are already out of print.) Xerox copies of out-of-print issues are available at cost. For a list of back issues and costs, send 2 1st-class stamps or 2 IRCs to the editorial office.

**SAFO EDITORIAL POLICY:** The purpose of the SAFCH is to "promote interest in the history and modeling of the a/c of the smaller countries". In support of this goal, the SAFO will publish articles on all aspects of aviation, both military and civil, from all periods of time and for all the smaller countries. (1) All manuscripts submitted by members will be published in the next available issue of the SAFO. (2) Subscription money will be used only to print and mail the SAFO; there will be no "miscellaneous" column in our budget. And, (3) members are encouraged to sponsor memberships for organizations, libraries, and individuals, especially those in countries where US funds are difficult to obtain.

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**COVER COMMENTS:** Our front cover features a RAN Skyhawk in its new wrap-around camouflage. The full story of this scheme and others carried by Australian Skyhawks begins on page 7. (RAN photo via Eric Sujecki) The rear cover presents a quartet of Cierva C.30 autogiros: three from Spain and one from Argentina. The stories of these aircraft is found on page 20.

**MEMBERSHIP LIST:** A list of SAFCH members, up-to-date as of October 1980, is now available to members for 75¢ surface mail or \$1.25 airmail.

**FOR SALE:** The following items are available from the editorial office: SHIELD OF DAVID (223 pages) \$12.50; A MAGYAR REPÜLES TORTÉNETE (388 pages) \$20.00; decals from Revell-Brazil at 50¢ each - VARIG DC-10, CRUZEIRO b.727, & VARIG Super Constellation.

**EDITORIAL:** One of the strengths of the SAFCH is that nearly half of our members come from countries other than the USA. This issue, for example, contains 14 pages contributed by non-US members. Processing subscriptions for these non-US members has taught me (and my bank) much about foreign currency. While I am quite naive about this subject, the intelligence and thoughtfulness of our non-US members have made things relatively easy. However, recent events have disturbed my complacency. Two checks, made out to US \$, have had their face values reduced by unexpected bank charges. SAFCH received only \$5 from a \$10 check when the Royal Bank of Canada took \$5 for themselves. In a second case, a check drawn on Citibank of New York for \$5.25 was subjected to a \$2.45 service charge, leaving the SAFCH with only \$2.80. In both cases the member paid his bank an exchange fee and was expecting the SAFCH to receive the full face value of the checks. I don't know if these two events signal a change in policy by these banks, but I encourage all members to find out if any additional charged will be levied on checks made out in US funds.

"The Finnish AF has leased two Fokker F-27 Friendships from KAR-AIR, and four Piper Arrow IV. Codes for the F-27's are FF-1 and FF-2. The ex-civil registrations of the Arrows were OH-PAF, -PAG, -PAH, & -PAI. The FAF codes are not yet known, but it seems that they will be PA-11 through -14 as OH-PAF is now PA-11. Notice that the Piper Arrow II's are coded PA-1 through -6 (PA-3 wfs). This system of different number series for different sub-types has been used before, for example, Me 109G-2/6, Curtiss Hawk 75A-3/4, etc. The 1981 budget includes money for new liaison aircraft, but it is not known if the leased planes will be bought or if a new type will be chosen. This information comes from Finnish newspapers, IPMS-Finland's Miikka Jokinen, and SAFCH's Ben Marselis."

"I will have to put my Fouga Magister Research Project into a holding pattern because it seems that I do not have much time for it right now. However, I will keep collecting material and I will want to reactivate this RP in the future."

Martti Kuivalainen (SAFCH #282)

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# ISRAELI TWO-SEAT SKYHAWKS

In order to improve its ground-attack capabilities the Israeli Airforce (IDFAF) began to look to the USA as a possible supplier. The first major purchase of aircraft from America came in the form of the Douglas A-4 Skyhawk. The initial order was placed in 1965, for 65 aircraft. This request was reduced to 48 aircraft by US authorities and delivery was intended to commence in 1966/67. The Israeli variant of the Skyhawk was designated A-4H, and was the first model to have the enlarged, square-tipped fin and the tail drogue chute. The 20mm Mk.12 wing cannons were replaced by the longer barrelled DEFA 30mm cannon. These early A-4H did not have the avionics hump characteristic of later models.

Actual delivery of the A-4 was delayed by the outbreak of the Six Day War in June, 1967, so it was not until late 1967 that the first aircraft began to arrive in Israel. Operational status was reached in early 1968. As with A-4s in US service the Israeli aircraft were intended for ground attack and strike missions. A total of 90 A-4H and 10 TA-4H were eventually delivered.

By late 1969 the delivery of the A-4H was further supplemented by the arrival of an additional 25 ex-US Navy A-4E/F. Further examples of this model (maybe up to 40 aircraft) were delivered later. To improve the capabilities of the A-4s already in service, many were modified by the addition of the avionics hump.

Delivery of the A-4 continued almost till the end when Douglas closed the Skyhawk production line. The last version to achieve operational status with the IDFAF was the A-4N Skyhawk II, of which over 100 were delivered. The A-4N is the export version, based on the US Marine Corp's A-4M. The A-4N includes many of the modifications originally requested for the A-4H, as well as the incorporation of the Elliot head-up display unit, Kearfott interial platform, Lear-Siegler digital computer and other updated technological innovations incorporated in the more sophisticated A-7 Corsair II. Like its USMC counterpart, the A-4N had 30% more engine thrust, improving manoeuvrability, rate of climb and acceleration. Other improvements include a self-contained engine starter and larger canopy for improved visibility. Many of the earlier models have been updated to A-4N standard.

Of the IDFAF's combat losses during the Yom Kippur War, October 1973, some 55 aircraft, or approximately 50% of total losses, were A-4s. But this is understandable since the Skyhawk was, numerically, the most important aircraft in the AF inventory and was committed almost exclusively in ground attack missions against heavily defended targets. In relation to the number of sorties flown the loss rate of the A-4 was quite acceptable, however the action of the first week of the war did not resemble the overall average. The situation on both the Egyptian and Syrian fronts was desperate for the Israelis, and the Airforce's first task was to help to attempt to stop or, at least, hamper enemy activity. In order to achieve this, the aircraft had to go in with little assistance from SAM/SAM/AAA suppression equipment. Within the first week of the war about 30 Skyhawks were lost in action. As well, large numbers were damaged and had to be withdrawn from service for various lengths of time while they were being repaired. Losses were replaced by deliveries from the USA. New aircraft from the Douglas factory were sent by sea and probably reached Israel too late to see action in the war. However, some 50-80 ex-USMC A-4s were air-ferried to cover the initial heavy losses and were sent into combat as soon as possible.

Experience with the A-4 during the 1973 war proved its value to the IDFAF and led to further orders for this type. Lessons from the war led to many modifications especially those intended to counter SA missiles. The most obvious external modification is the extended exhaust pipe designed to reduce the aircraft's infra-red signature.

Markings: Israeli Skyhawks are camouflage in 3-tone upper surface scheme, as illustrated. Underwing fuel tanks are usually camouflaged in the same colours, but to no particular pattern.

Stencilling, markings, etc., are those common to all Skyhawks. However as aircraft are repaired and repainted these stencillings are re-applied in Hebrew. Armament panel is also added to the nose-wheel door.

The national insignia on the uppersurface appears as illustrated. Underwing markings vary, some are on both wings while others only have under the left wing. (See part 2 for further details.)

All aircraft carry squadron badges of various sizes of the fins.

Illustrations: Fig. 1. Upper surface view shows the typical camouflage pattern which is applied both to the TA-4, as shown, and the A-4. Actual pattern varies amongst individual aircraft.

Fig. 2. TA-4? 404, October 1973. TA-4s saw limited action in 1973, probably in the FAC role or in attacking lightly defended targets. This particular aircraft was loaded with an MER in the centreline position, plus two fuel tanks. Zuni rocket-pods were probably carried on the outer stations. The location of the national insignia on the fuselage as shown was uncommon. Note the partially worn ejection warning triangle. The aircraft has no wing guns, even though the black gunblast panel has been painted on.

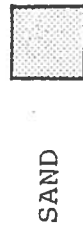
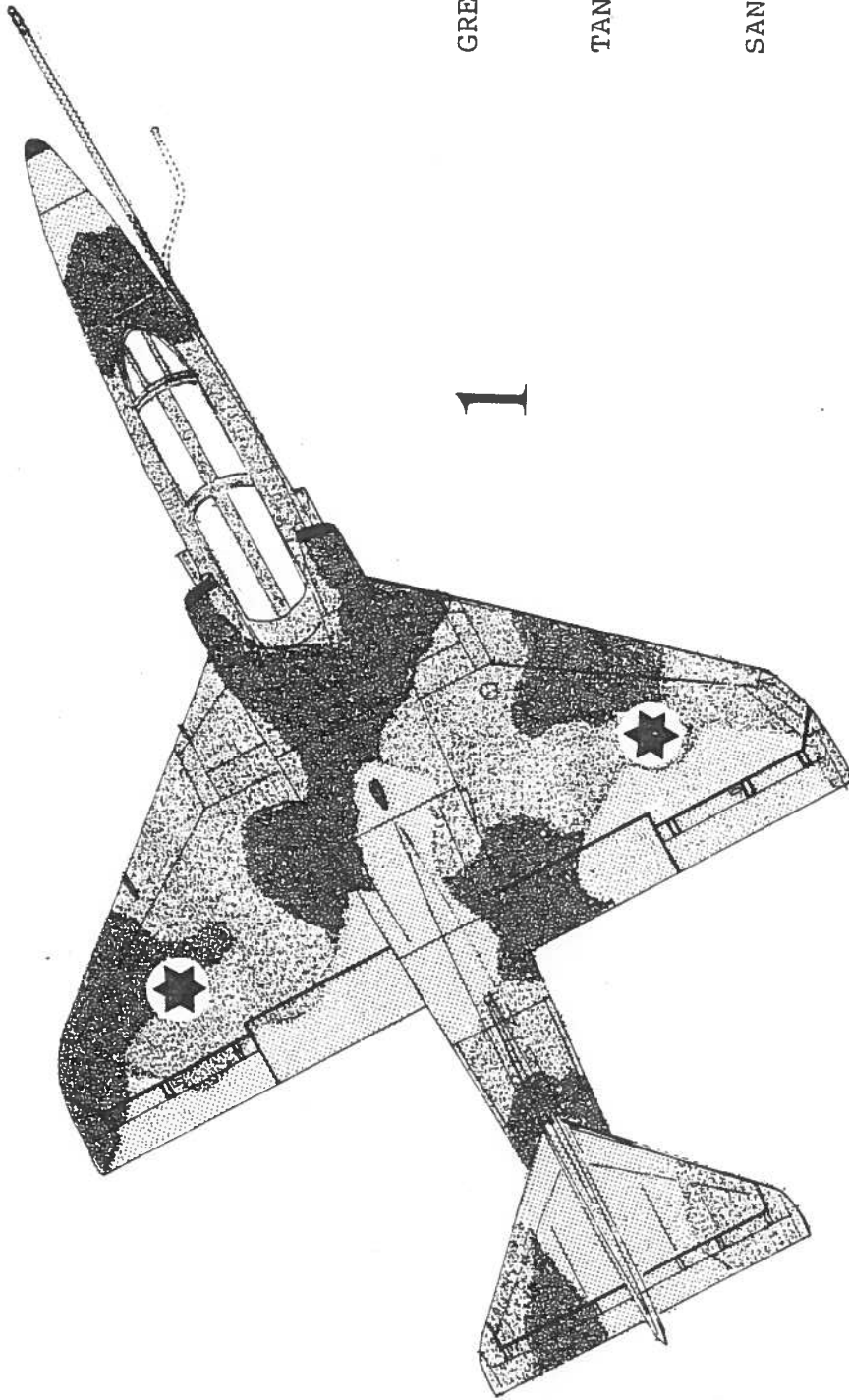
Fig. 3. TA-4H 547 as seen in the late 1970s. As an outcome of the experiences with AA missiles all Skyhawks were modified with the extended exhaust pipes as illustrated. Aircraft number was now carried on both the nose and base of fin. It should be noted that on most A-4s the nose number was lined up so as to be parallel with the runway. (This applies to all Skyhawks illustrated here with the exception of 404.) The aircraft is illustrated carrying a centreline fuel tank which is camouflaged, with a coloured tip, either red or black. Aircraft has wing guns.

Fig. 4. TA-4H 715 with underwing fuel tanks, but only the right one has the coloured tip. This aircraft has no guns on the black nose tip. However, it carries the bent refuelling probe.

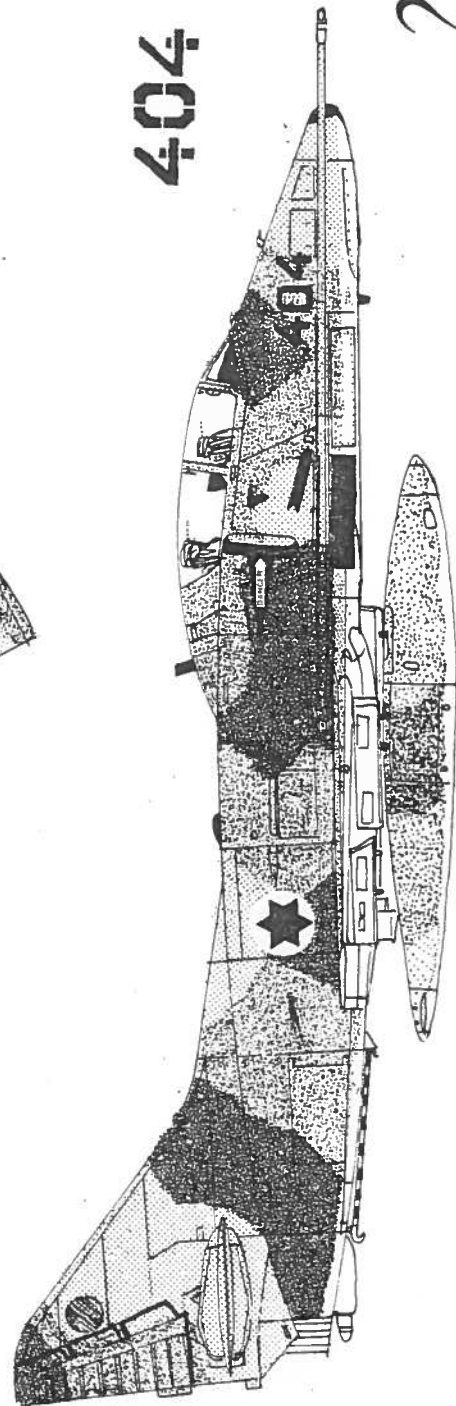
Fig. 5. TA-4H 726 has markings and details similar to 715, except it has wing guns and black gunblast panels. Note also that the style of the numbers on the nose differ from that of the numbers on the tail.

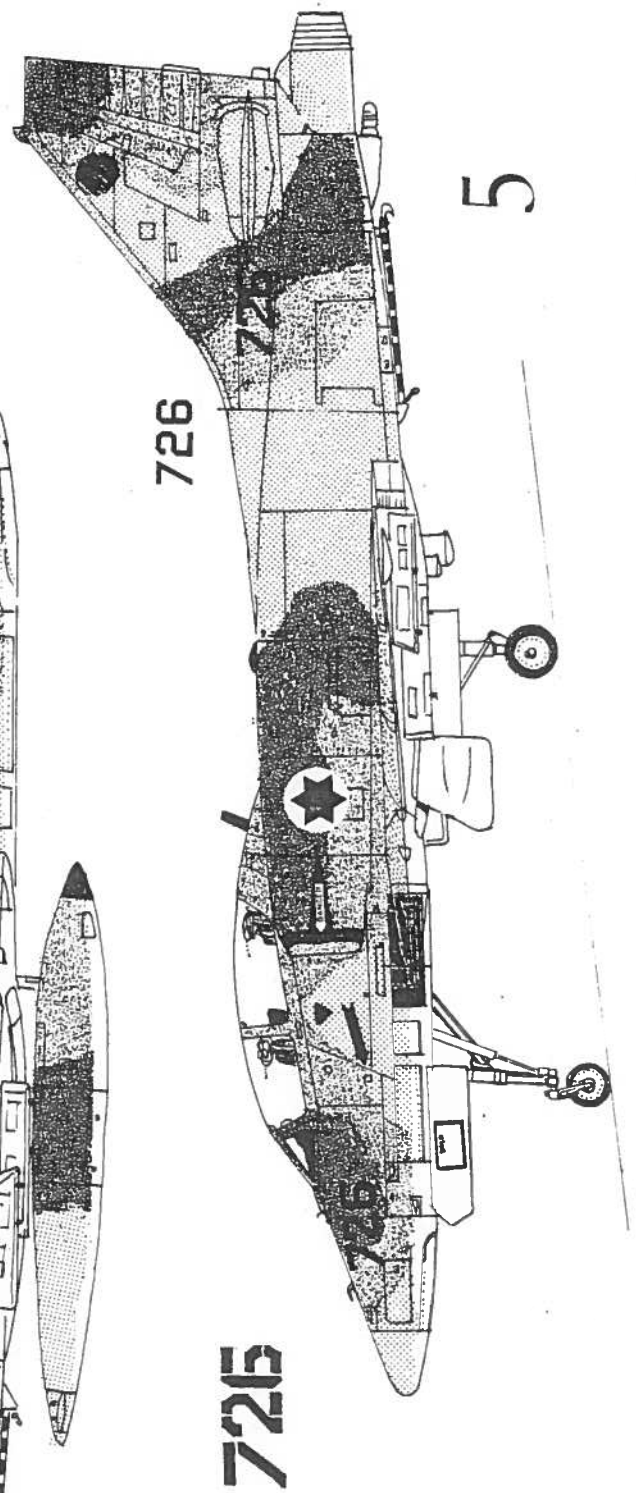
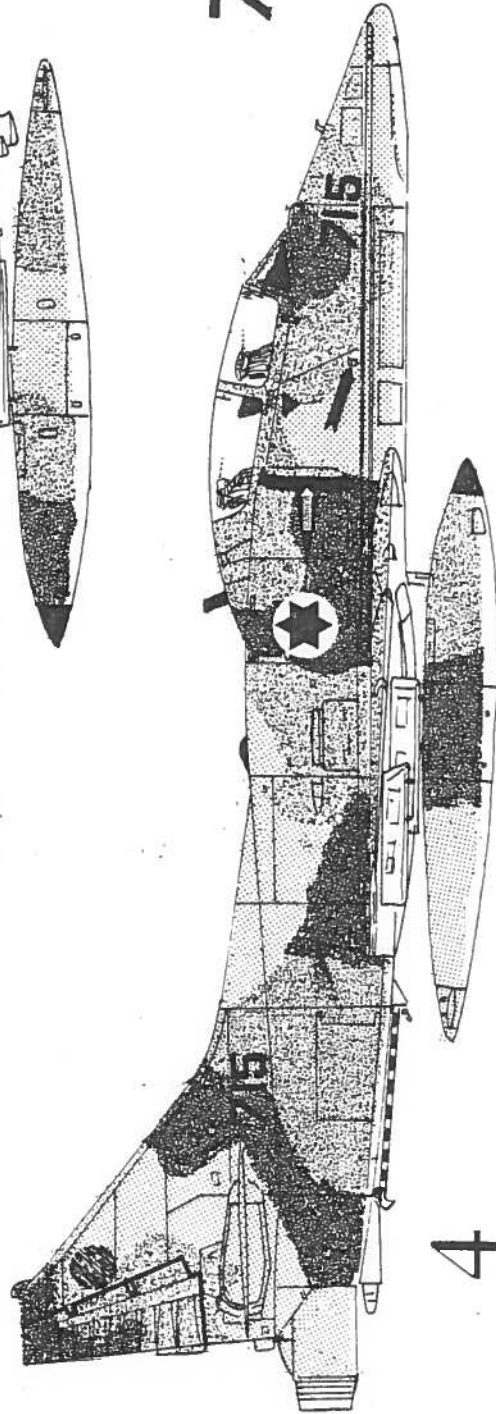
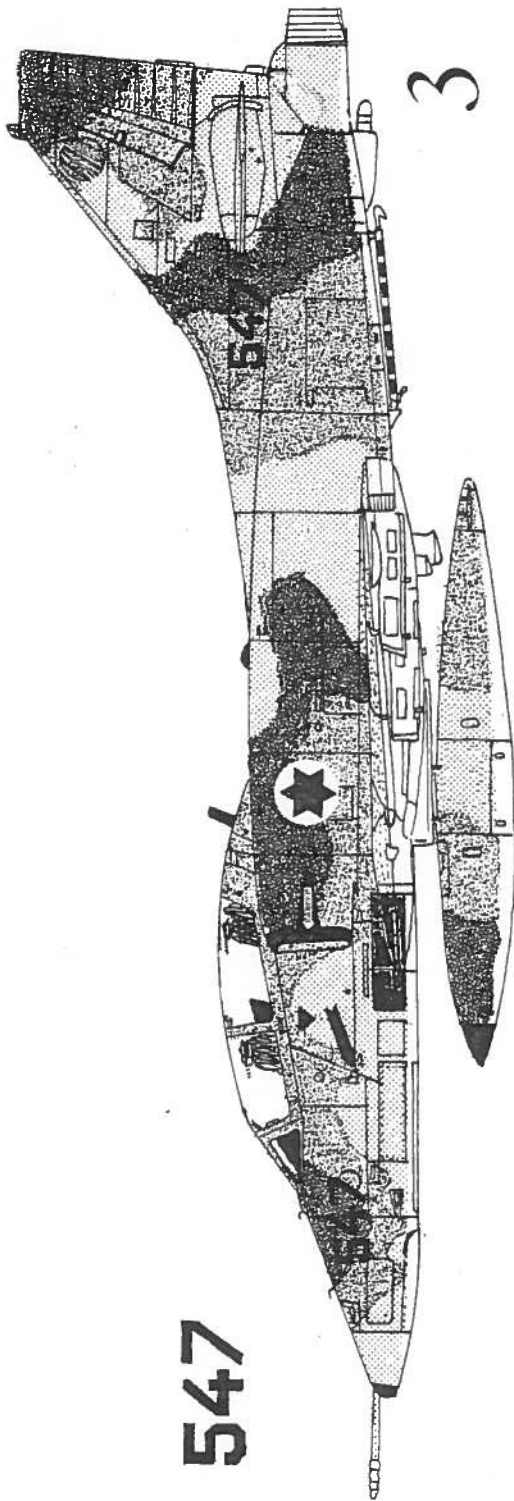
The location of the armament panel on the nose-wheel door, shown in Fig. 5, is common to all aircraft illustrated. In addition, all aircraft illustrated have the cockpit canopy edged in off-white.

Text and art by Harry Margulies (SAFCH #264)



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**AVIATION SOCIETY OF AFRICA NEWSLETTER.**

Feb 80 (20 pages) Photos: Angola Boeing 373 D2-TAH, Trilander ZS-KMF, Constellation ZS-DVJ, Junkers A50 Junior ZS-ACL, Zambian AF Caribou AF303, Zaire AF Super Frelon 9T-SPF; "SAAF 60 Years - Part 1"

**DIRTY PLASTIC.**

Summer 80 (20 pages) "Mighty Moth" (11 pages of drawings of DH60G, M, T, & GIII in service with RAAF, RNZAF, Germany, Argentina, Japan, China, US Navy, Austria, Norway Spain, Portugal, Denmark, Egypt, Iraq, Chile, Sweden, Brazil (floats), Belgium, Indonesia, Italy, Lithuania, Greece, NEI, Ireland, Switzerland, & Czechoslovakia).

**IPMS-MALLARI (FINLAND).**

33-34 (16 pages) "SAAB 35 Draken" (23 photos & 5 pages of drawings mostly of Finnish a/c - including "Kreivi von Rosen" - but also one Swedish and one Danish a/c).

**IPMS-CANADA RT.**

#1 80 (24 pages) "IPMS Canada's List of Canadian Aircraft Models" (A listing of several hundred a/c types used by the Canadian Armed Forces noting which can be made from available kits).

**IPMS MAGAZINE UK.**

Mar/Apr 80 (16 pages) "F-16A of the Royal Belgium Air Force" (6 photos of details).

May/Jun 80 (16 pages) Photo of Balliols being created for delivery to Ceylon.

**MILITARY AVIATION REVIEW.**

May 80 (24 pages) Photos: Iranian Navy F-27 5-2602 & 5-2603, Irish Air Corps King Air 232 & 234. "Luft-waffe T-Birds" (3 pages including 6 photos & 3 tables).

Jun 80 (24 pages) Photos: Danish Sea Lynx S-134, Greek A-7H 159533, Iranian Army CH-47C 5-4002, Turkish C-47 CBK-04.

**JP-4.**

Apr 80 (88 pages) Photos: Iranian Army CH-47C 5-4016 (c), Greek AB.212ASW (c), Bolivian PC-7 FAB-450, Spanish CL-215 40406, Dutch F-16 J-212, Libyan Gazelle (c). "Guerra Aerea Sopra la Carinzia" (3 pages including 4 photos), "I Nuvoli" (7 pages including 11 photos, 9 side-view drawings, & table of a/c designed by Nuvoli), "The Royal Hong Kong Auxiliary Air Force" (8 photos of Islander HKG-7 (c), Alouette III HKG-1 (c), Musketeer HKG-5, & Bulldog HKG-6; plus color photo of 'coat of arms').

May 80 (88 pages) Photos: Somalia G.222 (c), Swedish UN AB.204B UN42 (c), Paraguayan EMB-326GB. "Il Rifugio Svizziro" (18 photos including a B-17 in Swiss markings and a Yak-1M), "Fiat Cansa F.C. 12" (3 pages including 4 photos and scale drawings).

Jun 80 (88 pages) Photos: French Navy DC-6, Paraguayan EMB-326GB I-1005 (c), South Korean F-5F 80782 (c). "La Forza Aerea Polacca sul Fronte Orientale - 1943-1945" (5 pages including 11 photos and 7 color drawings of Polish Yak-1M, UT-2, Po-2, Il-2m3, & Szcze-2).

**AIR CLASSICS QUARTERLY REVIEW.**

Canada: 442 Squadron (Vol. 7, #2).

**AIR INTERNATIONAL.**

Brazil: Embraer's New Trainer - details of the new T-27 basic trainer (Vol. 18, #6).

International: The Light Fighter Market and an European proposal (Vol. 18, #2). Nice One, Giscard! Or how the Middle East (not to mention Africa) was won (Vol. 18, #4).

Japan: Mitsubishi's Sabre Successor (Vol. 18, #3)

Spain: Iberian Air Cover Upgraded. (Vol. 18, #6), El Fury Espanol. Hawker Fury in Spain (Vol. 18, #6).

Compiled by Tor Scott (SAFCH #403)

**FLIEGER REVUE.**

#316 Photos: E. German MiG-15 516 & 601; "Lubin R-XX" (photo & drawings); "CANT Z.1007" (photo & drawing).

#317 Photos: Polish MiG-23 6135; Czech MiG-15 3233, 3213, 3234. Full set of drawings of all types MiG-15.

#318 Photos: W. German Fantrainer 98+30; E. German MiG-21 688, 675, 730; Canadian CF-104 766.

#319 Photos: E. German MiG-17 758; MiG-21 463, 896, 944; MiG-23; Mi-6 415; Philippine SF.260. Full set of drawings of all types MiG-21. Colour drawings: E. German MiG-21 215 & 529.

#320 Photos: Bulgarian Ar.96.

#322 Photos: E. German L-39 Albatros 153; Polish Su-20 03; W. German Tornado 98+03. Colour drawing E. German MiG-23.

#323 Photos: Polish PZL P.37, P.7, P.23; Lublin R-XIII; RWD 14; LWS 3. Drawings: Polish PZL P.11 8.124, PWS 10.

#325 Photos: E. German MiG-21 474; Danish SAAB 35; Swiss Hafeli DH.5 417.

#327 Photos & 3-view drawings: Rumanian SET 7; Swiss Pilatus P.2.

LETECTVI + KOSMONAUTIKA. Standard features: (1) "Malé letectvo" - modeling article usually includes photos and drawings. (2) "Letadla 39-45" - one page with photos, 3-view drawing, & color side & plan view. (3) "Monografie" - several pages with photos and full-page 3-view drawing. (4) Back cover - color side-view drawings usually with a plan view.

1/80 (1) SB-2. (2) Ki-24. (3) F-16. (4) Czech S.20, B.534, Il-2/3m, MiG-15.

2/80 (1) SB-2. (2) Ro.63. (3) F-16. (4) SB-2; Spain, Czech, China, Bulgaria, Poland. Photos: Czech Il-14FG.

3/80 (1) SB-2. (2) MiG I-224. (3) F-101. (4) Czech B-71. Photos: Czech Po-2 & MiG-21.

4/80 (1) Avro 547. (2) BV 155. (3) DHC-7. (4) DHC-7. Photos: Polish MiG-17F.

5/80 (1) Fokker Dr.1. (2) CAO-700. (3) B-36. Photos: Swiss Ju-52/3m, Argentine Sea Lynx.

5/80 (1) Fokker Dr.1. (2) XP-56. (3) B-36. (4) W. German F-4. Photos: Polish PZL-104.

7/80 (1) Be-6. (2) Ki-34. (3) C-123. (4) Czech La-5UTI, La-5NF. Il-2/3m, La-7, Po-2, Junkers W 34. Photos: Czech MiG-21, USSR L-39, E. German MiG-21, Czech L-39.

8/80 (1) Be-6. (2) Gribovskij G-27. (3) ANT-20. (4) Czech MiG-27, Rumanian MiG-21, Hungarian MiG-21, Bulgarian MiG-21, E. German MiG-23, Polish Su-7. Photos: Czech L-29.

9/80 (1) Be-6. (2) Mjasiscev Pe-2I. (3) AIR-7. Photos: Czech W 34, MiG-21, Ju 352.

10/80 (1) Be-6. (2) CANSA FC-12. (3) P-2 Neptune. Photos: Czech Z-142, Z-50L; Chile T-25 Universal;

Canadian CH-47C; Danish Alouette III; Philippine Bo-105; Czech Si 204, Anson Ju 52/3m.

11/80 (1) Il-18. (2) RP-63. (3) P-2 Neptune (drawings of Kawasaki P-2J. (4) Czech Anson C.XII, Aero C-3 (Siebel Si 204D), Ju 52/3m, Ju 352A-1. Photos: Czech Liberator GR.VI.

**FLAPS.**

#226. Photos: Brazil EMB111; Argentina Pucara AX-05 & Sea Lynx 3-H-42; Czech L-39 3902; Spain C-101 EC-202; Malaysia Bulldog FM1273(?); Botswana Defender OA4 22; "Aviones de la Guerra - Polikoapov I-15bis".

#227. "Las FAMET Escogen el Helicoptero Bo 105" (photo 09574 & drawing); :SAAB 35" (photos of Swedish 02, 18, 51 & drawings of Danish S.35); "Northrop Participa en el Aumento de Capital de CASA" (photo SF-5 CE9-001); "Aviones de la Guerra - Latecoere 28".

#228. "El Shenyang F-6bis" (photos of Chinese MiG-19 10769, 21035, 21036, 21130, 21131, & 21132 and drawings); "España y su Poder Aereo" (photos of Spanish Mirage 141-01, 111-8, CE9-001; Phantom C12-16; Bo 105 Guadia Civil; CASA C-101; Orion 221-20; Caribou; Aviocar XT 12)

Continued on page 19.

# RAN SKYHAWKS

The Royal Australian Navy has operated a total of 20 Skyhawks which were delivered in two batches: The first batch consisted of new aircraft delivered in 1967 (8 A-4G and 2 TA-4G). The second of 10 aircraft were refurbished ex-USN Skyhawks (8 A-4F and 2 TA-4F) delivered in 1971.

In the RAN, these aircraft served with two squadrons: (1) VF-805 is the first-line squadron embarked on RAN flagship HMAS Melbourne and shore based at HMAS Albattross N.A.S. Nowra, New South Wales. (2) VC-724 is the training squadron, including weapons training, also based at Nowra.

Throughout most of their service in the RAN these aircraft have sported a colour scheme similar to that of the UNS, i.e., light gull gray and white. The two squadrons carried different tail markings which have changed through the years while retaining the same colours; VF-805 using red and white, VC-724 using yellow and blue.

VC-724 still retains the USN-type scheme with tail markings consisting of blue with a yellow "flash" (see drawing).

VF-805's scheme has recently been completely changed. The current scheme consists of a wrap-around camouflage of dark grey and light blue with all tail markings removed and the size of the roundels and unit badge slightly reduced. Weapon pylons and drop tanks carried by this unit are also camouflaged.

Not all of VF-805's aircraft have been changed to this new scheme; it is being applied during major services and this will take time. Aircraft known to have the new scheme are 885 and 877. Aircraft 886 sports a scheme consisting of camouflaged upper surfaces while retaining the white under surface; a scheme that may have been an alternative to the camouflage scheme finally chosen.

According to RAN Public Relations, only aircraft of VF-805 squadron are to receive the new camouflage scheme.

Armament carried by RAN T/A-4G/F are as follows:  
Fixed 2x20 mm cannon (100 rpg)  
Sidewinder air-to-air missile (up to 4 per a/c)  
Air-to-surface rockets  
Bombs up to 1000 lb.

# ROYAL AUSTRALIAN NAVY SKYHAWK SERIAL NUMBERS

A-4G			A-4F		
870	N-13	155051	882	N-13	154903
871	N-13	155052	883	N-13	154904
872	N-13	155055	884	N-13	154905
873	N-13	155060	885	N-13	154906
874	N-13	155061	886	N-13	154907
875	N-13	155062	887	N-13	154908
876	N-13	155063	888	N-13	154909
877	N-13	155069	889	N-13	154910
TA-4G			TA-4F		
878	N-13	154647	880	N-13	154911
879	N-13	154648	881	N-13	154912

REFERENCES: AVIATION NEWS, "Warpaint" No. 3 A-4 Skyhawk.  
RAN Public Relations for photographs  
AUSTRALIAN FLYING, Nov/Dec 1979  
Special thanks to Mike Mirkovic (SAFCH #465)

Eric Sujecki (SAFCH #477)

Editor's note: To complete the story of the colour schemes and markings carried by RAN Skyhawks, we are reprinting an article by SAFCH member Mike Mirkovic. This article first appeared in the Spring 1980 issue of DIRTY PLASTIC. DP is highly recommended to all SAFCH members and a subscription to four issues can be obtained by sending \$5.00 (US and Canada) or \$6.00 (all others) to Pat Fowler, 509 W. El Camino Dr., Phoenix, AZ 85021.

reviews-reviews-reviews-reviews-reviews-reviews-reviews-reviews-reviews-reviews-reviews

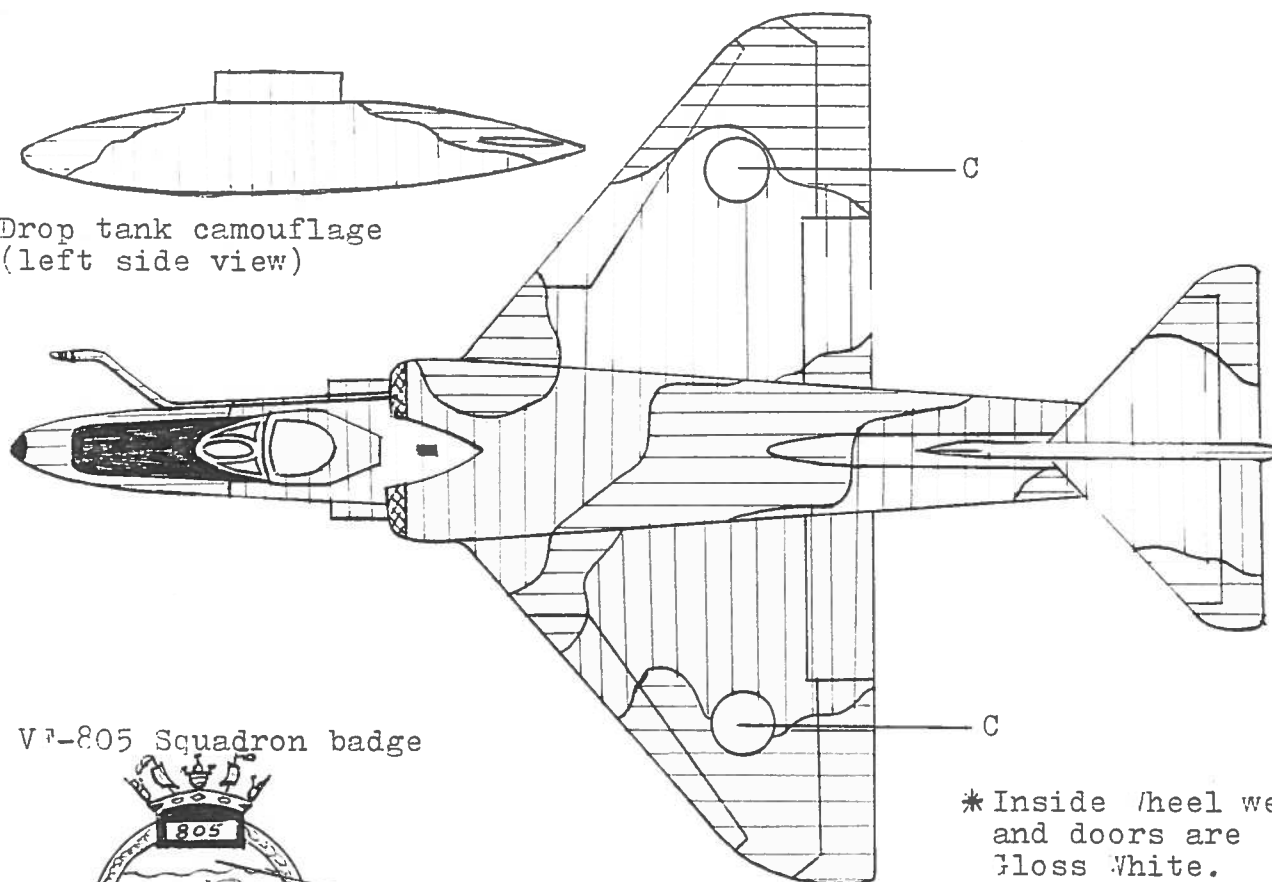
HINTS AND TIPS FOR PLASTIC MODELING, editor: Burr Angel  
Soft cover, 52 pages (21 by 28.5 cm) over 166 b&w  
photos and sketches, Kalmbach Books (1980), \$3.95.

This book, produced with the cooperation of IPMS/USA contains hundreds of helpful hints that should both inspire novice builders to produce better models and excite the most jaded of experienced modelers into improving their product. This work is divided into seven chapters: 1. Tools and Workbench Equipment (52 entries). 2. Assembly (39 entries). 3. Masking, Painting and Decaling (52 entries). 4. Canopies and Cockpits (19 hints). 5. Detailing (57 hints). 6. Weathering and Figure Painting (23 hints). 7. Displaying and Caring for your Models (13 hints). While the majority of hints refer to aircraft modeling, many apply to any type of modeling, and the tank, ship and figure builders are represented by hints specific to their subspecialities. The text is clear and (usually) concise, and most hints are illustrated by either a photo or sketch. Photos of completed models are appropriately limited to the covers and chapter headings. Probably the best feeling for the book can be gained for a sampling of hints: "Ordinary spring clothespins make good clamps; reverse the halves and they make great clamps." "Filling large holes with body putty is frustrating. Chances are that the dried plug will fall out or crack when it is handled or scribed. A more reliable method of filling holes is to drill out the hole with a bit the size of a sprue fragment, coat the tip of the sprue with epoxy or plastic cement, and

plug the hole with the sprue. After the cement has cured or dried, cut off the plug nearly flush with the surface of the patched piece and file and sand to the desired contour. This method works equally well for filling sink holes in castings." "Apply decals to frisket paper that has been painted the same color as the panel on which the decal is to be applied. Then stick a frisket paper on the model and cut it to the exact size of the panel. The resulting decaled panel has no ugly decal-film edges." "The edges of open cockpits are covered with leather padding to protect the pilot from injury. This coaming can be simulated with lengths of insulating spaghetti tubing or insulation pulled from electrical wire. Slit and slide in place." "Use a draftsman's circle template to mask wheel hubs. Select the correct size hole for your model's wheels, cover all the rest with a sheet of paper, hold the template against the hub, and spray paint onto the hub." "Small areas of chipped paint on models of metal aircraft look more realistic if the chips are simulated with flecks of white paint. Aluminum or silver might at first seem the appropriate color, but white usually looks better." "Bill McClanahan's SCENERY FOR MODEL RAILROADS contains a full treatment of how to simulate smooth, rippled, or turbulent water using plaster, glass, Plastic Wood, casting resins, and other materials. This book is widely used by diorama builders because it contains clear descriptions of how to model miniature landscapes."



Drop tank camouflage  
(left side view)



VF-805 Squadron badge

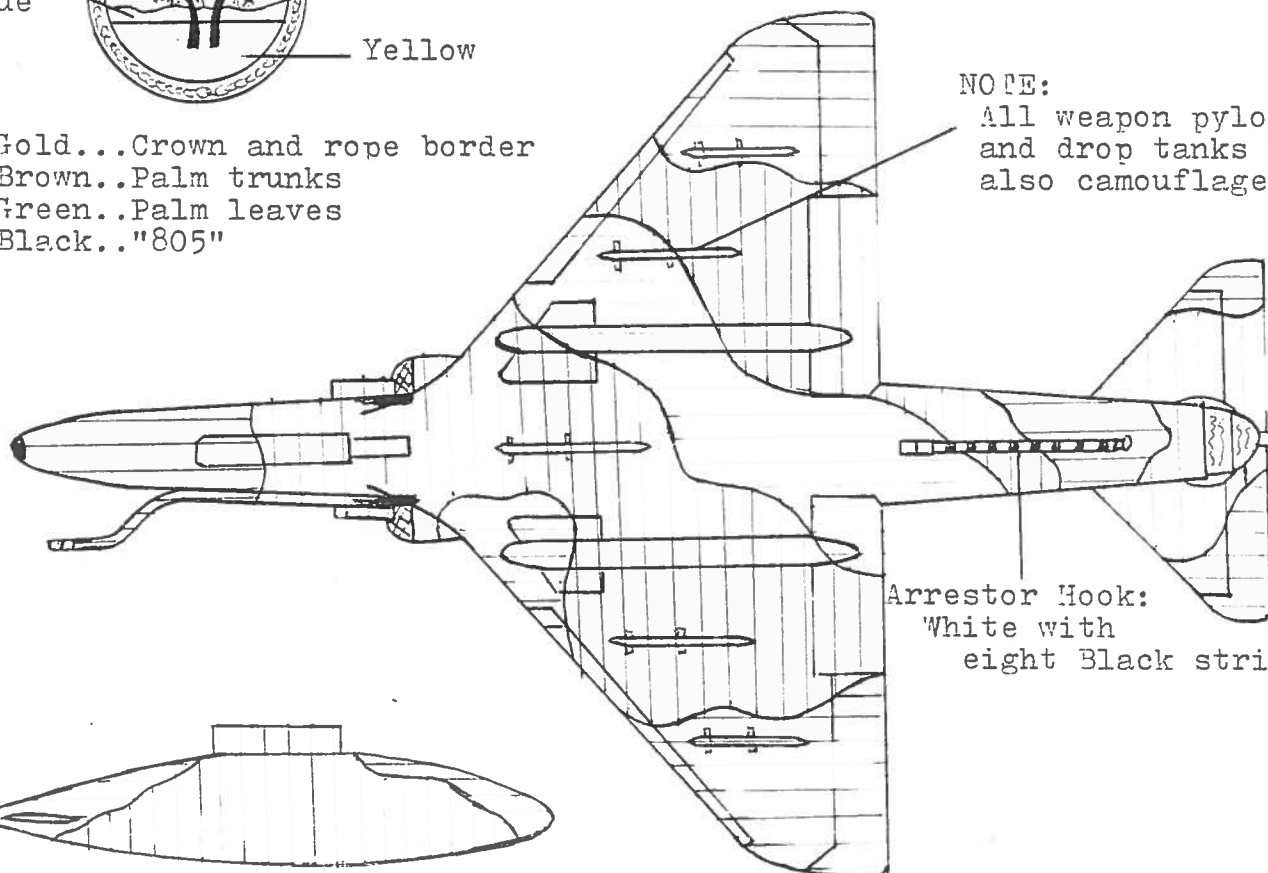


Light Blue  
White  
Yellow

Gold...Crown and rope border  
Brown..Palm trunks  
Green..Palm leaves  
Black.."805"

\* Inside wheel wells  
and doors are  
Gloss White.

NOTE:  
All weapon pylons  
and drop tanks are  
also camouflaged.



Arrestor Hook:  
White with  
eight Black stripes



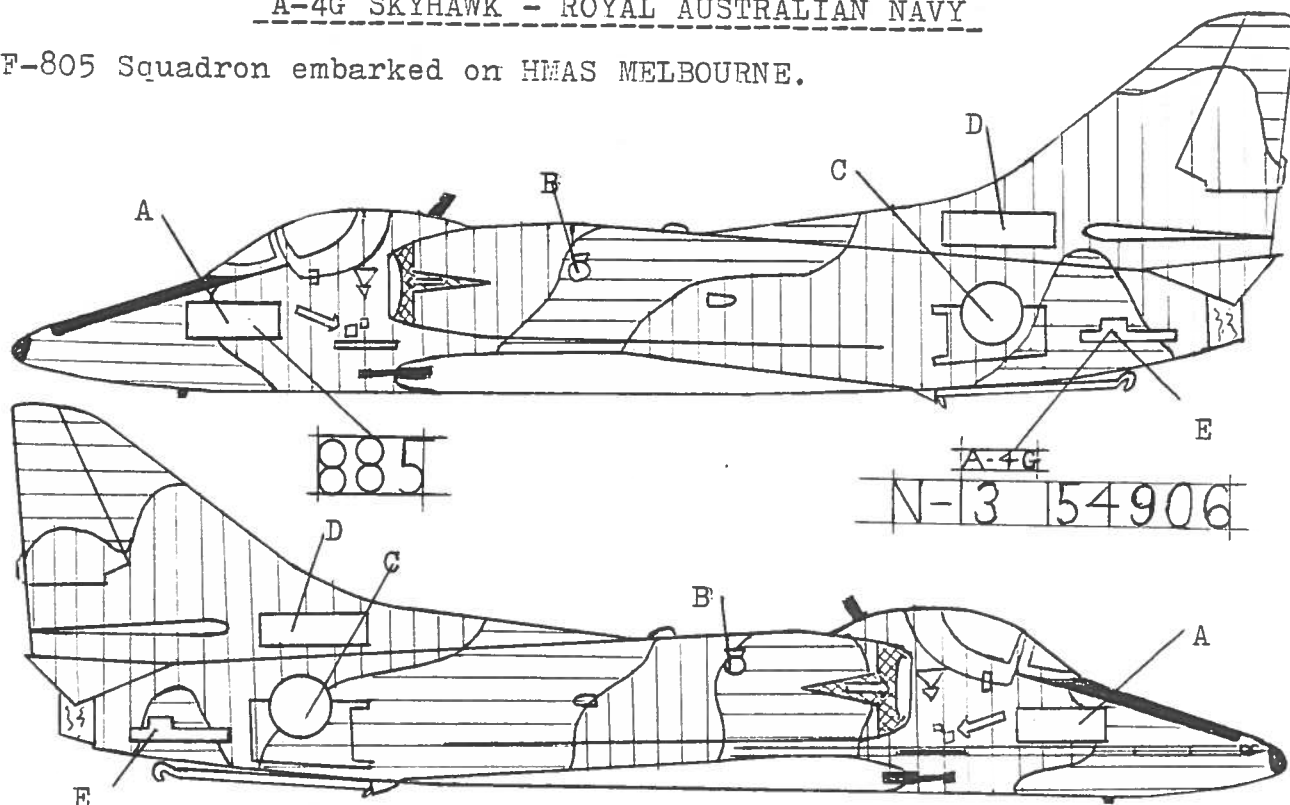
Drop tank camouflage  
(right side view)

*Eric Suter 10/8/77*



# A-4G SKYHAWK - ROYAL AUSTRALIAN NAVY

VF-805 Squadron embarked on HMAS MELBOURNE.



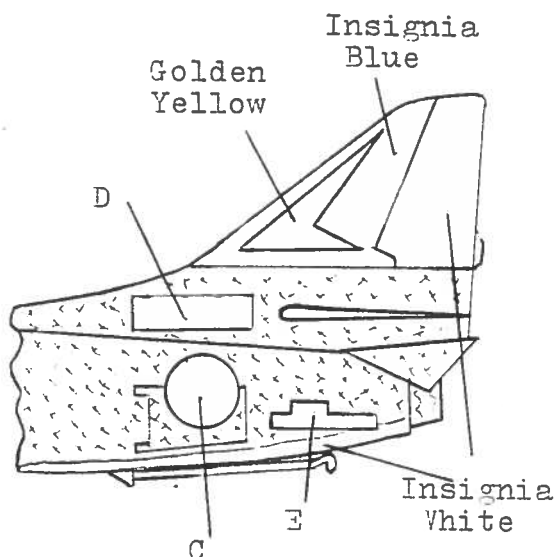
Tail markings for A-4G+TA-4G Skyhawks of VC-724 Squadron based at HMAS ALBATROSS N.A.S. NOWRA N.S.W. (training Sqn.)




## INDEX




- A...Aircraft number
- B...VF-805 Squadron badge
- C...Australian Roundel (see note below)
- D..."NAVY"
- E...Aircraft Serial number

NOTE.. Australian Roundel is 23 inch dia. on camouflaged aircraft and 30 inch on USN type scheme.

NOTE.. Squadron badge is "unofficial" and are decals obtained and affixed by squadron personell, they are normally 8 x 12 inch.

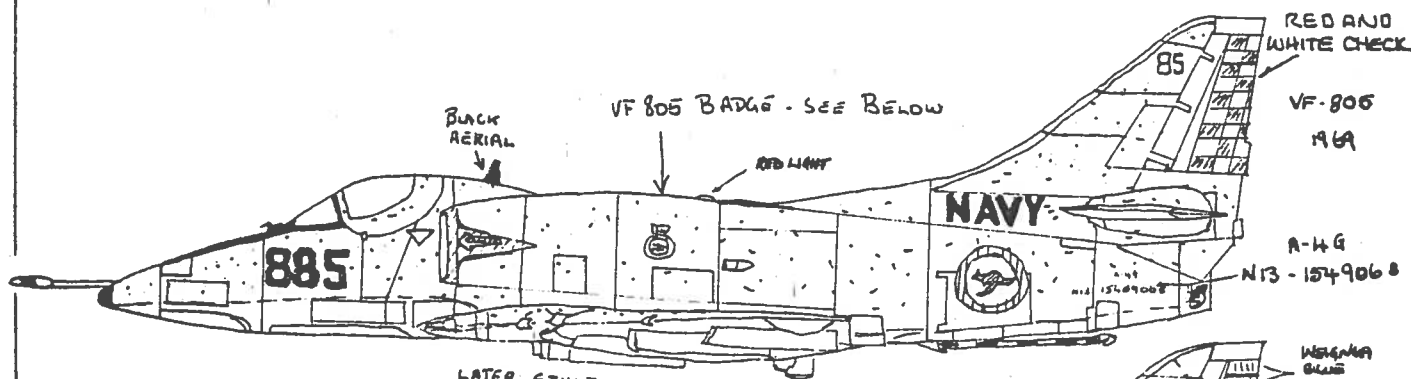


-  AIRCRAFT GREY  
B.S. 381C-693  
(MATT)  
(equiv. FS 595 36280)
-  LIGHT ADMIRALTY  
GREY.  
B.S. 381C-697  
(MATT) (equiv FS  
595 35622 BLUE)
-  RED (MATT)  
F.S. 595-31136

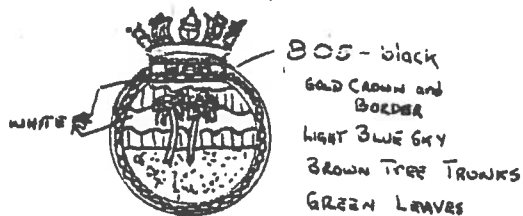
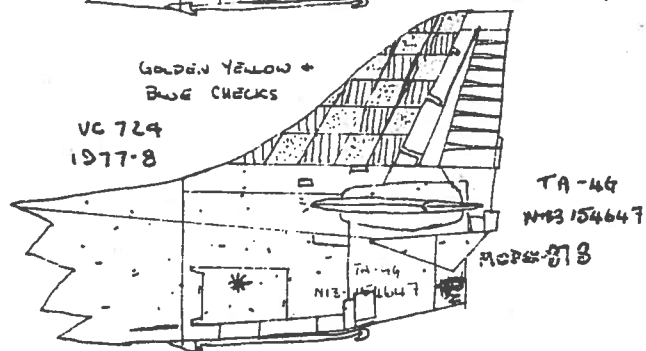
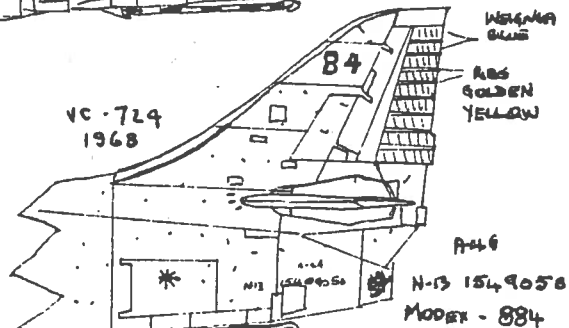
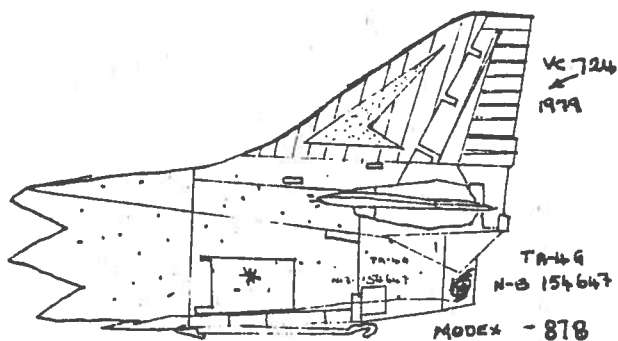
-  LIGHT GULL GREY  
F.S. 595-26440
-  BLACK (MATT)  
F.S. 595-37038
-  BURNT METAL

ERIC SUJECKI SAFC 477

# ROYAL AUSTRALIAN NAVY / FLEET AIR ARM - MCD.D. A-4G + TA-4G SKY HAWKS



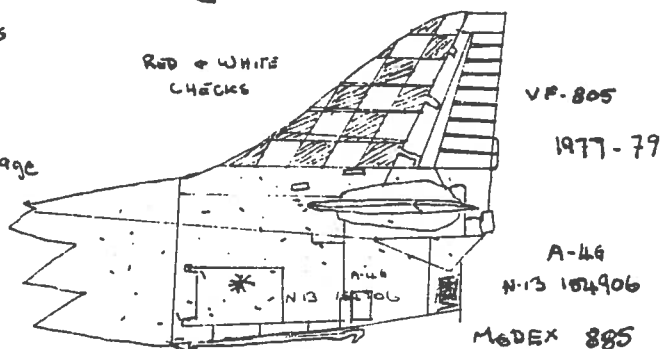
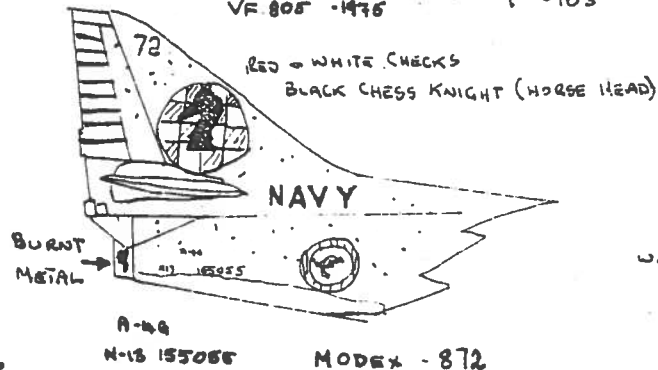
LATER STYLE  
AERIAL ON  
CURRENT A/C.



N.B. VF805 only  
carried on mid fuselage  
after 1976 -  
before 1976 it was  
carried on the fin  
under number or  
wasn't carried at all.  
check photo's

-DRAWINGS APPROX.  
ONE SEVENTH SECOND-

VF 805 - 1976



## REFERENCES:-

AIR COMBAT - MAY 1978  
IPMS/Australasia Newsletter #22 - 1969  
KOKU-FAN - 8/1979  
A.H.S.A. Journal - various  
WARPAINT #3 - MCD.D. A-4 SKY HAWK Variants - L. P. ACOLK  
Aircraft of the U.S. NAVY

M. M. KROVIC, 8/79, BONDI, N.S.W.

SHOWN FULL SIZE IS ONE  
OF THE ACTUAL DECAL BADGES  
APPLIED TO RAN SKYHAWKS  
COLORS ARE -  
GOLD - CROWN AND ROPE  
BORDER -  
LIGHT BLUE - SKY  
YELLOW - LAND  
BROWN - PALM TRUNKS  
GREEN - LEAVES  
BLACK - 805

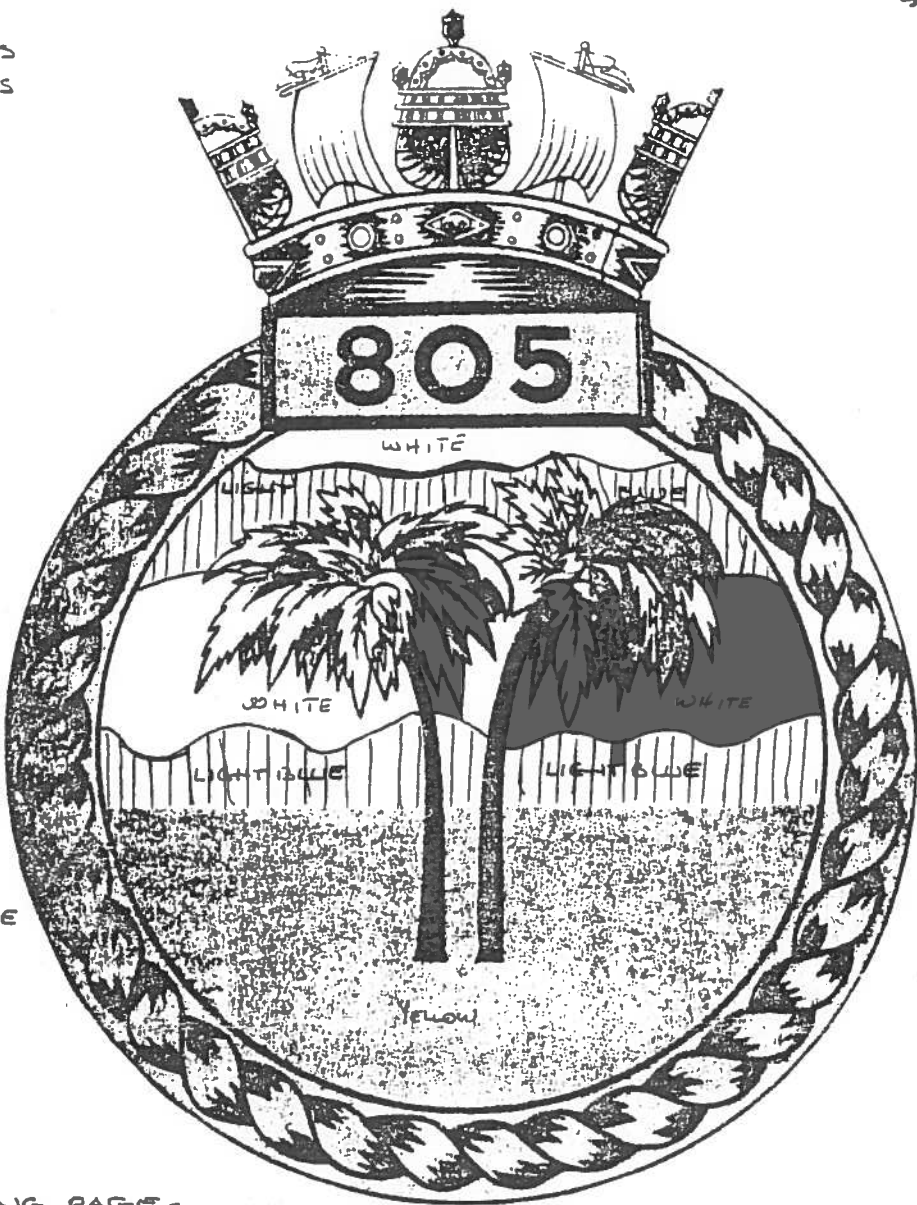
# -RAN A-4G S/N-

AIRCRAFT NO.	SERIAL
882	N-13 154903B
883	N-13 154904B
884	N-13 154905B
885	N-13 154906B
886	N-13 154907B
887	N-13 154908B
888	N-13 154909B
889	N-13 154910B

# -RAN TA-4G S/N

880	N-13 154911B
881	N-13 154912B

ABOVE AS OF 1969 THE  
'B' SUFFIX DROPPED FROM THE  
SERIALS: ABOUT 1974 -



## COLORS - CODE FOR FACING PAGE -



VF 805 - is based on H.M.A.S. MELBOURNE  
and shore based at H.M.A.S. 'Albatross'  
N.A.S., Nowra, N.S.W.



VC-724 - is based at Nowra  
and is the SKYHAWK  
TRAINING SQUADRON



ALL AIRCRAFT ARE IN U.S.N. COLORS  
i.e. LT. GRAY - UPPER SURFACES

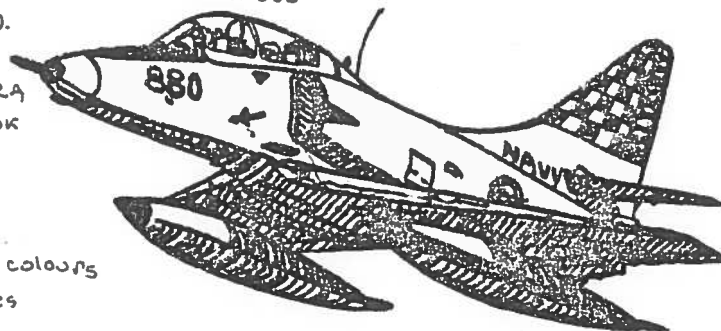


GLOSS INSIGNIA WHITE - LOWER SURFACES  
- RUDDER  
- AIR FLYING SURFACES



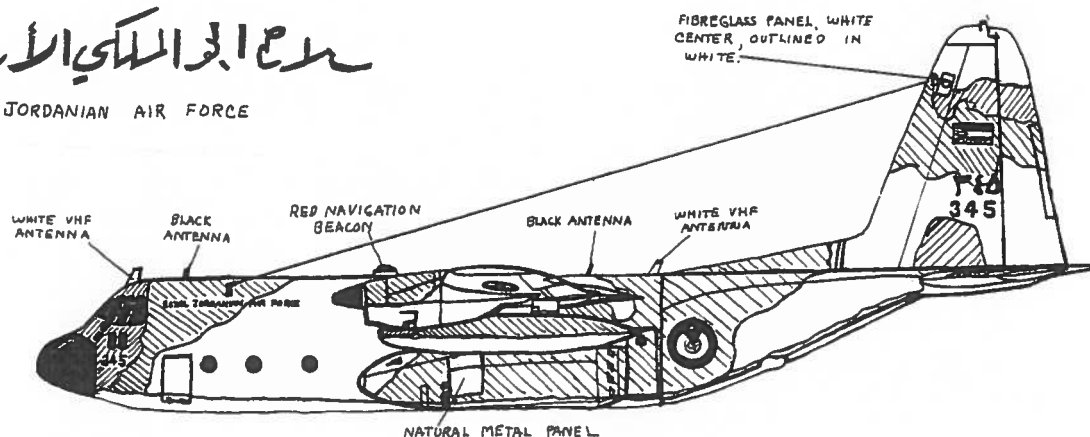
ALL AIRCRAFT ARE KEPT IN EXCELLENT CONDITION

\* RANDBL



N.B. VC724 has badge  
under cockpit but I've been  
unable to determine its  
design at this date.

٣٤٥  
3 4 5  
سلاح الجو الملكي الاردني  
ROYAL JORDANIAN AIR FORCE



white number '345' under cockpit  
on left side, in Arabic on right  
side

black lettering "ROYAL JORDANIAN AIR FORCE"  
on left side behind cockpit, repeated in  
Arabic on right side

undersides of fuselage, wings, horizontal stab. - off-white

camouflage colors: sand

mid-stone

dark green

black number '345' on both sides of tail  
with black Arabic numbers above

national insignia in six positions  
national flag on both sides of tail

props - aluminum with black  
spinner and cuffs, yellow  
blade tips

# C-130H GABON AIR FORCE at McGuire A.F.B., N.J. May 1980

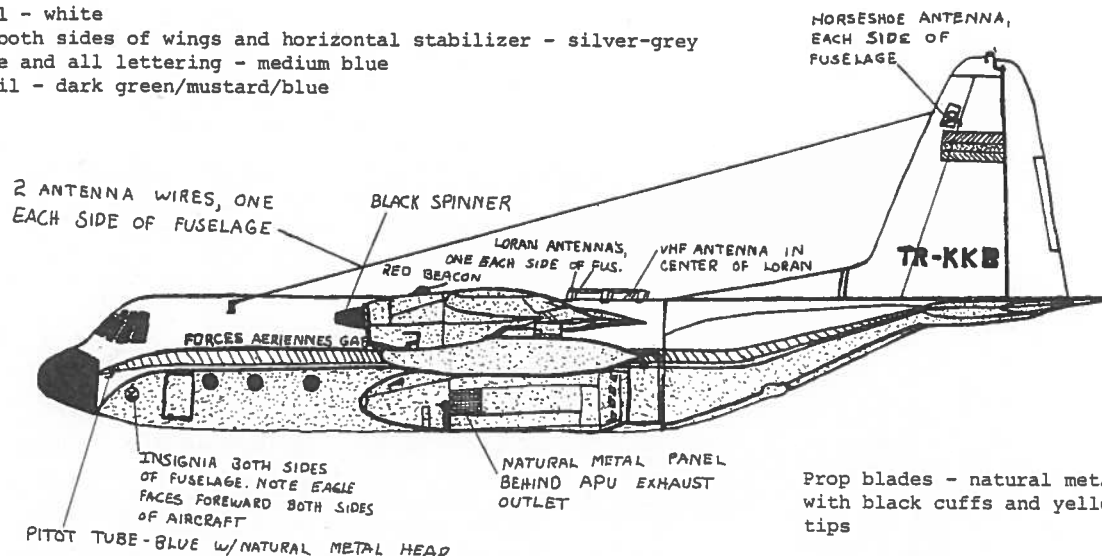
Coded TR-KKB "FORCES AERIENNES GABONAISES"

Top of fuselage and tail - white

Underside of fuselage, both sides of wings and horizontal stabilizer - silver-grey

Band on side of fuselage and all lettering - medium blue

National insignia on tail - dark green/mustard/blue



Prop blades - natural metal  
with black cuffs and yellow  
tips

heavy exhaust staining  
behind engines

fuselage  
insignia



light blue disc  
silver eagle with black detail  
standing on silver bar perch  
black rectangle behind forward part of perch  
white triangle below perch  
gold half-circle device in triangle  
black edge between triangle and scroll  
white scroll, writing indistinct

By Tom Smith  
SAFCH #488

THE NORTHROP N-3PB, NORWAY'S PATROL  
BOMBER

by Gus Morfis (SAFCH #3; IPMS-C #1481)

Of the handful of Northrop N-3PB floatplanes that were produced, none made the headlines in any dramatic operations in WWII. Their operations were the grim and dangerous ocean patrols which were so important, yet so unrecognized. In retrospect, their story can be considered typical of those who struggled against nature and the Nazis through those early war years.

On 7 March 1939, Northrop Aircraft was incorporated as a totally independent company, ending their previous association with Douglas. The new company inherited the reputation for advanced design concepts which was the hallmark of John K. Northrop. Concurrently, the Norwegian Government recognized the vulnerability of their coastline and had formulated a requirement for a small, handy, coastal patrol floatplane. Simplicity and ruggedness were important because of the primitive nature of the proposed operating bases, float operation was a must to take advantage of Norway's fjords and the shortage of developed air bases, and the ominous events in Europe made quick delivery imperative.

The two got together and on 12 March 1940 the Royal Norwegian Naval Air Force gave Northrop a contract for twenty-four N-3PB floatplanes. The price was to be \$57,000.00 each, but a series of customer-requested design improvements raised this to \$60,168.94. The design concept was based on an updated and improved A-17. However, Jack Northrop's traditional empennage and canopy contours disappeared and what was to emerge was a clean, handsome new design that was the fastest production floatplane of its day.

The airplane was very advanced for its time. It was powered by a Wright "Cyclone" R-1820-G205B engine of 1,250 HP, which gave it a top speed of 257MPH and a 2,600 ft/min rate of climb. It carried a three man crew and was armed with four 50 caliber machine guns in the wings. In addition, it carried two 30 caliber machine guns for aft protection.

Production proceeded rapidly and the first flight of #301 (the airplanes were serialized #301 thru #324 while on the production line) took place on 1 Nov. 1940 at Lake Elsinore, California. Flight testing went well, the first airplane being formally accepted by the customer on 5 February 1941. The remaining aircraft were accepted in groups of three or four with the last group being accepted on 27 March 1941.

Northrop could find no other foreign orders for the N-3PB and since the basic design concept did not fit in with the U.S. strategic planning, there was no hope for a U.S. order either. Therefore, the production line shut down and converted to other work.

In the meanwhile, the Nazi invasion of Norway altered the planned operational theatre for the N-3PB. Their new duties called for them to fly the North Atlantic on convoy escort and anti-submarine patrol. However, before going off to war a cohesive force had to be assembled and trained so most of the N-3PBs were crated for shipment to Toronto, where a training base for Norwegian flight crews was established. A small number were sent to the Vancouver area, but it is unclear whether they were to continue training or

if they were to go directly into coastal patrol. On 21 February 1941 #303 crashed with no survivors and #305 suffered a take-off accident on 18 March 1941, only one of its crew surviving.

At "Little Norway" (the Toronto base) 330 Squadron was formed on 25 April 1941. This was the first Free Norwegian Squadron to be formed and they were assigned to RAF Coastal Command. The Squadron was quickly made operational, establishing its main base at Reykjavik, Iceland, with detachments at Akureyri and Budareyri. They took eighteen of their N-3PBs with them, the rest being left at Toronto for training (where #307 crashed into a ferry while taking-off in fog on 30 June 1941). Six aircraft were operated at Reykjavik, three at Akureyri, three at Budareyri and six were held in local reserve.

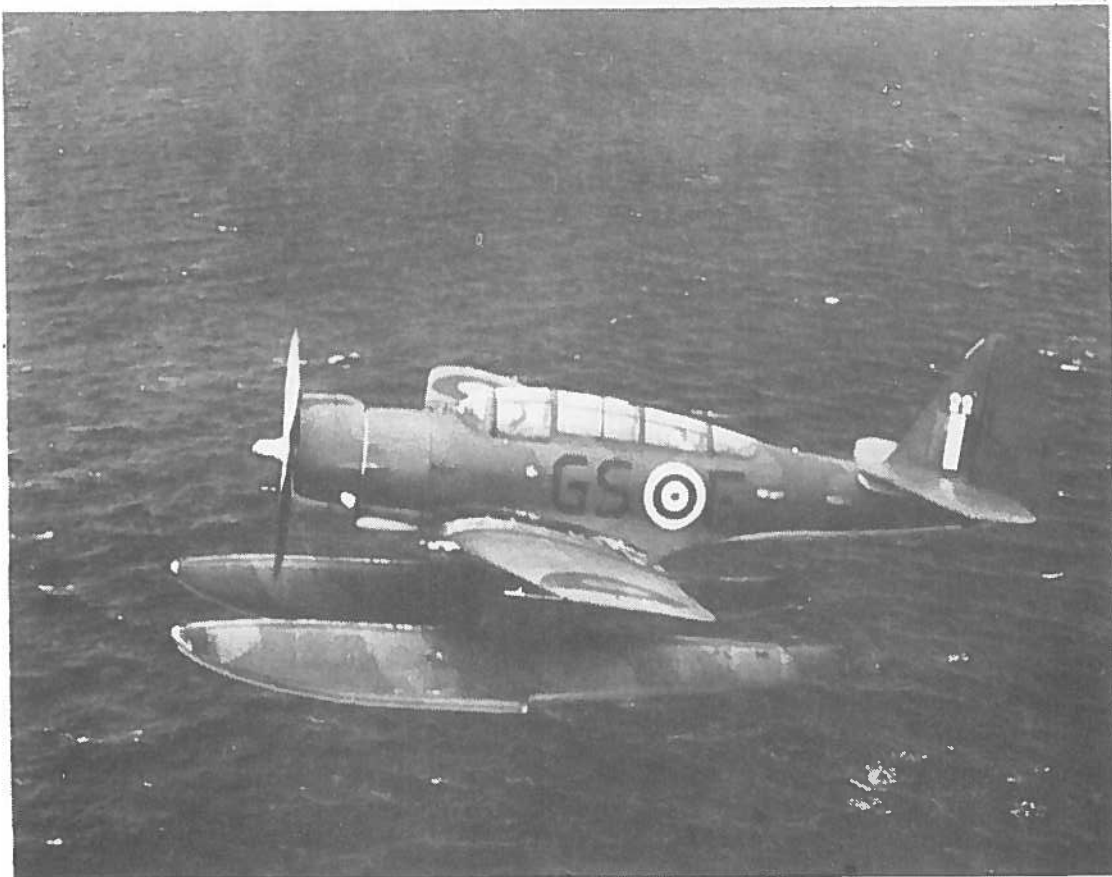
To say that their maintenance facilities were spartan would be an overstatement. The physical facilities were virtually non-existent, being just ramps bulldozed into the beach so that the airplanes could be hauled out of the water for service. There was housing for personnel but the aircraft were serviced outside. Despite these grim surroundings, the crews quickly reassembled and checked out their airplanes and the first test flight of an N-3PB in Iceland is recorded as taking place on 2 June 1941. (NOTE: A persistent myth has it that an N-3PB spotted the Nazi battleship Bismarck. This is not possible since the Bismarck was sunk on 27 May 1941; a week before!)

330 Squadron's first operational flight (by #318) was on 23 June 1941. Their responsibility had been expanded to include Icelandic coastal patrol, guarding against any possible Nazi invasion and watching for any clandestine weather stations that they might attempt to establish. Casualties were not long in coming; #323 crashed while landing at Fossvogur on 24 July 1941, the crew surviving. At this time they received their Squadron Code; GS-"X", there being some period of time while they phased in. #324 (GS-G) failed to return from its mission of 30 July 1941. #315 (GS-L) crashed while landing on 22 October 1941 at Akureyri. #311 (GS-B) was damaged beyond repair on 16 September 1941 at Budareyri while loading a depth-charge. #321 (GS-E) crashed on landing at Budareyri on 4 February 1942. And on 25 April 1941, #301 (GS-A) failed to return from patrol.

The Squadron received some welcome reinforcements when those three N-3PBs (#302 GS-N; #304 GS-V and #306 GS-K) which had been left behind in Toronto finally joined them in Iceland. They were sorely needed since spares and maintenance problems were becoming quite serious. Unfortunately, #302 (GS-N) was not fated to survive long, crashing in fog on 17 September 1942 at Vattarnes, with no survivors. The next casualty was #313 (GS-L) which crashed off Skagata on 4 November 1942 with no survivors.

The lack of spares was becoming critical, and compounded by the approach to the limits to their airframe service life meant that some of the N-3PBs would have to be retired. They would be cannibalized to keep the remainder flying. By the end of 1942 #309 (GS-K); #310 (GS-B); #312 (GS-D) and #317 (GS-M) were scrapped and by the Spring of 1943 #314 (GS-E); #316 (GS-S); #318 (GS-T) and





A pair of views of GS-F in flight. This was the longest lived N-3PB, surviving the war and being scrapped in 1956 as a result of damage sustained when a hanger roof collapsed. The insignia and markings date these photos to some time between July 1941 and April 1943. (Photos courtesy of Northrop Aircraft)

#319 (GS-G) joined them. 330 Squadron had already received some Catalinas to make up their losses and to keep them operational and it was becoming obvious that the days of the N-3PB were numbered. Only three remained but on 21 April 1943 #320 (GS-U) sank in the Thjorsa river as a result of a rough landing. Now only #306 (GS-K) and #322 (GS-F) were left. These two aircraft soldiered on in Iceland alone, for the Squadron H.Q. shifted from Reykjavik to Oban, Scotland, at the beginning of the year. Their Catalinas were supplemented by Sunderlands and the old N-3PBs had neither the youth or the range to keep up. Finally, in June, the two remaining N-3PBs rejoined their Squadron at Oban where they eventually went into storage for the remainder of the war.

After the war, 330 Squadron transferred to Norway, operating Sunderlands. The old N-3PBs were taken out of storage and finally flew "home", but there was no operational use for them so they went back into storage. On 5 February 1949 #306 (GS-K) was decommissioned and sold for scrap at Sola, Norway. #322 (GS-F) lingered on as an instructional airframe until 26 May 1956 when it was crushed in the collapse of a hanger roof at Kjervik, Norway and the wreckage sold for scrap. This was the end of the last N-3PB.

In retrospect we find that there were few operational highlights to tell about. The men flew out, patrolled as assigned, and returned when their patrol was over. On occasion a U-Boat might be sighted and attacked, or they might even be at the right place at the right time to drive off a FW-200 Condor that was harassing a convoy. Generally, this has not been an exciting narrative but we must put it into proper perspective. 330 Squadron was flying over the North Atlantic summer and winter in single engined airplanes a couple of hundred miles from shore and under radio silence. This leaves very little margin to survive any kind of a mechanical problem or operational difficulty and it is remarkable that only two N-3PB failed to return from their patrols.

How "good" an airplane was the N-3PB? This is hard to establish, but comparing it with the Catalina which supplanted it or the Sunderland which supplanted both is interesting. The airplane was far smaller than either of the flying boats thus it could come in closer to its target before being spotted and was a smaller target to the AA gunners. This smallness had its price; range and patrol time was comparatively limited and crew comfort was less. There was no flight deck but there were duplicated controls in the second position. The 50 caliber wing guns could out-range the 30 caliber forward turrets on the flying boats and this meant that enemy AA gunners could be driven down from a greater distance. In addition, the penetrating power of a 50 caliber bullet could cut through the ship's plating that would stop a 30 caliber bullet. The N-3PB was more nimble than either the Catalina or the Sunderland and coupled with its greater speed could get in more attacks. On the other hand its load carrying capacity was limited, compared with the other two, so the number of depth charges it could carry was less. It is probable that the N-3PB was operating at the limit of its capability in a job that was far more arduous than it had been designed for. Generally, the crews liked the airplane and spoke highly of it. It was available when it was needed and served well in a far harsher environment than was imagined when it was designed. It is a tribute to the crews who flew them and the crews who kept them flying that they fulfilled the tasks assigned to them. It is no less a tribute to John K. Northrop, who designed the N-3PB and to the people who

built them.

Note that most of the N-3PB losses were the result of take-off or landing accidents. Generally a land plane can suffer some damage in a take-off or landing mishap, but it can usually be towed or carried off to the maintenance area for repairs. With a floatplane the problem is more serious in that any damage of a moderate nature puts the airplane in danger of sinking. Once sunk, without elaborate diving and lifting apparatus the airplane cannot be retrieved. Even if it is successfully raised and retrieved the electrical, hydraulic, engine, instruments, etc... have been subjected to salt water flooding which will require extensive repairs or replacement. Thus an accident which might have caused moderate repairable damage to a land plane will probably be a disaster to a floatplane.

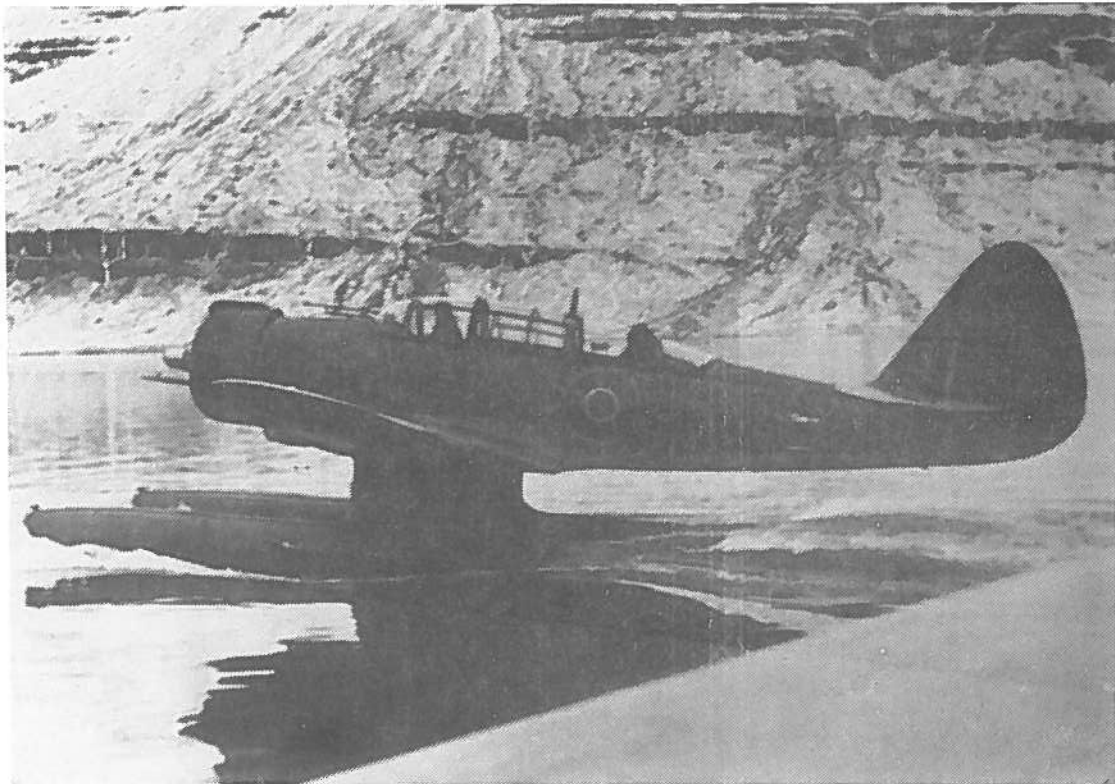
#### EPILOG:

The N-3PB story is not over yet. When #320 (GS-U) sank into the Thjorsa River no one could foresee that thirty-six years later this accident would be considered to be a stroke of luck. Mr. Ragnar Ragnarsson, vice-president of the Icelandic Aviation Historical Society (IAHS) was involved in a long term study of the N-3PB's history. His study convinced him that this airplane might still exist, and with luck might even be restorable. Accordingly, IAHS put together a very comprehensive project to investigate the crash site. In October 1977 a team of twenty volunteers, led by Mr. Ragnarsson as project manager, started a detailed search and on the 15th the wreckage was reached. When a full assessment was completed, IAHS decided that retrieval and restoration was beyond their immediate resources and outside participation would be required if the project was to be successfully concluded.

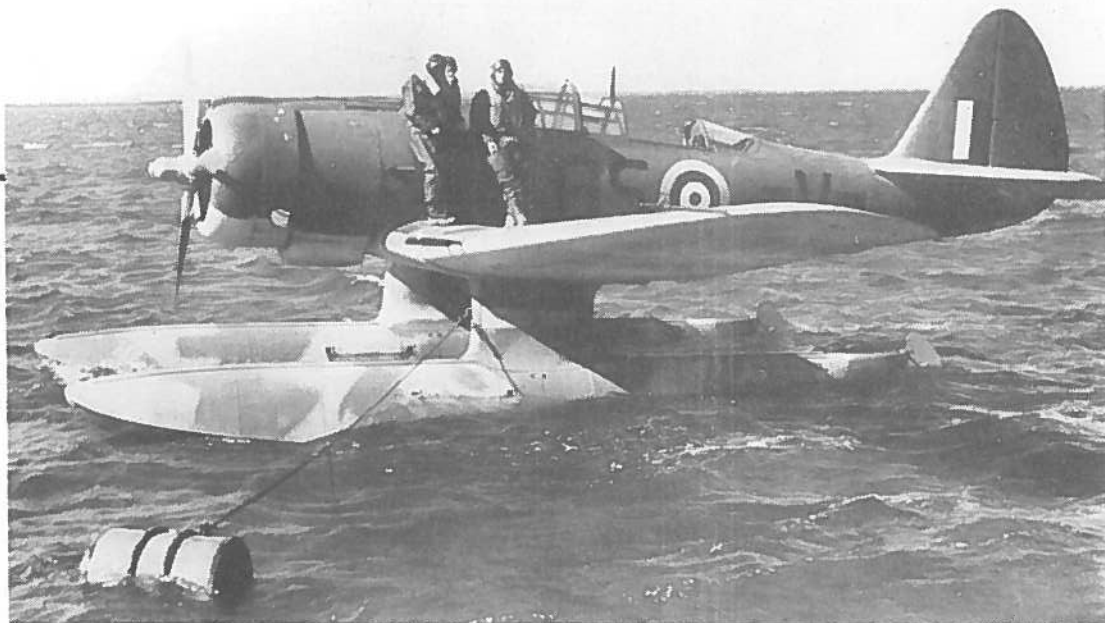
Late in 1978 the Northrop Corporation was approached to see if they would be interested. This unusual (for Northrop) request was brought to the attention of Mr. Leo Gay, an Engineering Design Specialist whose avocation is the restoration of old aircraft. On 2 February 1979 he arrived in Iceland to assess the situation and report his findings to Northrop for their decision. After much discussion it was decided that Northrop would be interested in participating in the restoration project as a celebration of the Company's fortieth anniversary.

The plan was that the remains were to be transported to Northrop, who would restore the N-3PB. It would then be presented to the San Diego Aerospace Museum and would go on display there for a period of time. Then it would go to Iceland and be on display there. Finally it would go to its permanent home in the Norwegian Forsvarsmuseet (Armed Forces Museum). In exchange, Norway would give the San Diego Museum a gift of an airplane. Everybody benefits. Norway gets a restored N-3PB. Iceland gets a temporary N-3PB display. Northrop gets the publicity for their anniversary celebration. San Diego gets a temporary display of the N-3PB and a permanent gift of some other aircraft!

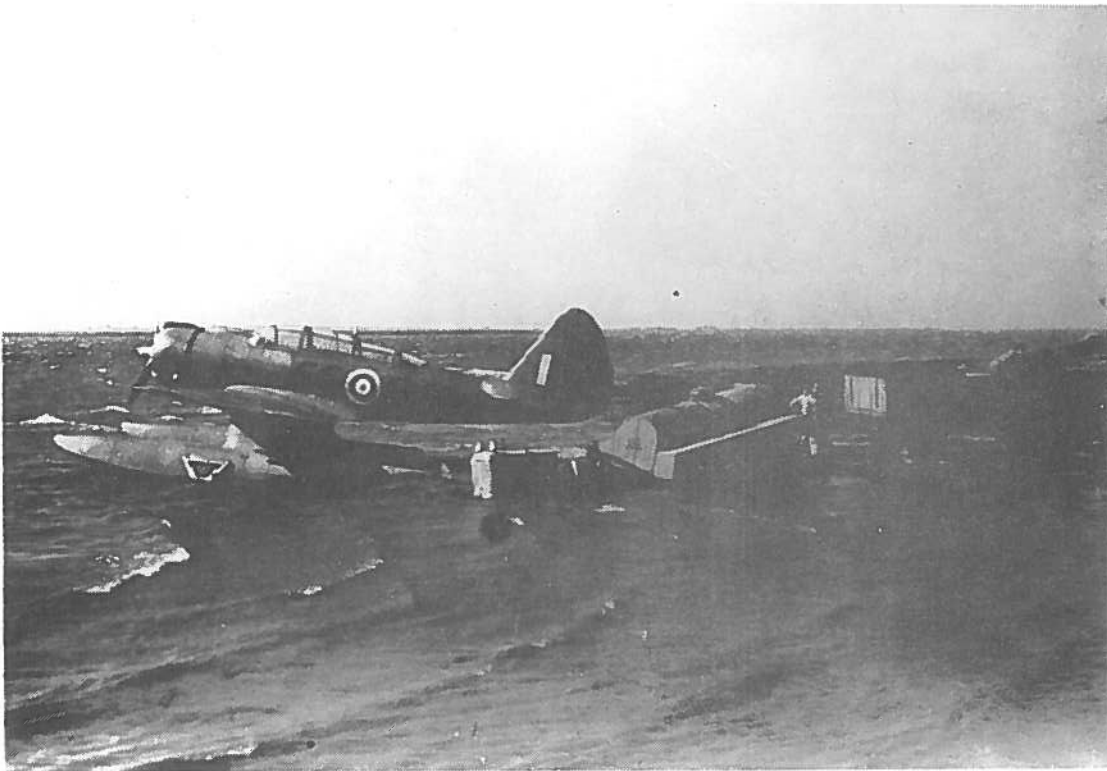
On 11 August 1979, the first phase of the restoration project was completed. Mr. Gay, accompanied by Mr. Sveinn Thordarson, a Sr. Technical Specialist at Northrop, joined a team of volunteers from Great Britain, Norway, the U.S. and the IAHS. Their task was to raise the N-3PB from the river and prepare it for the long trip to California. (As a boy, Mr. Thordarson lived just across the bay from the base at Reykjavik so if



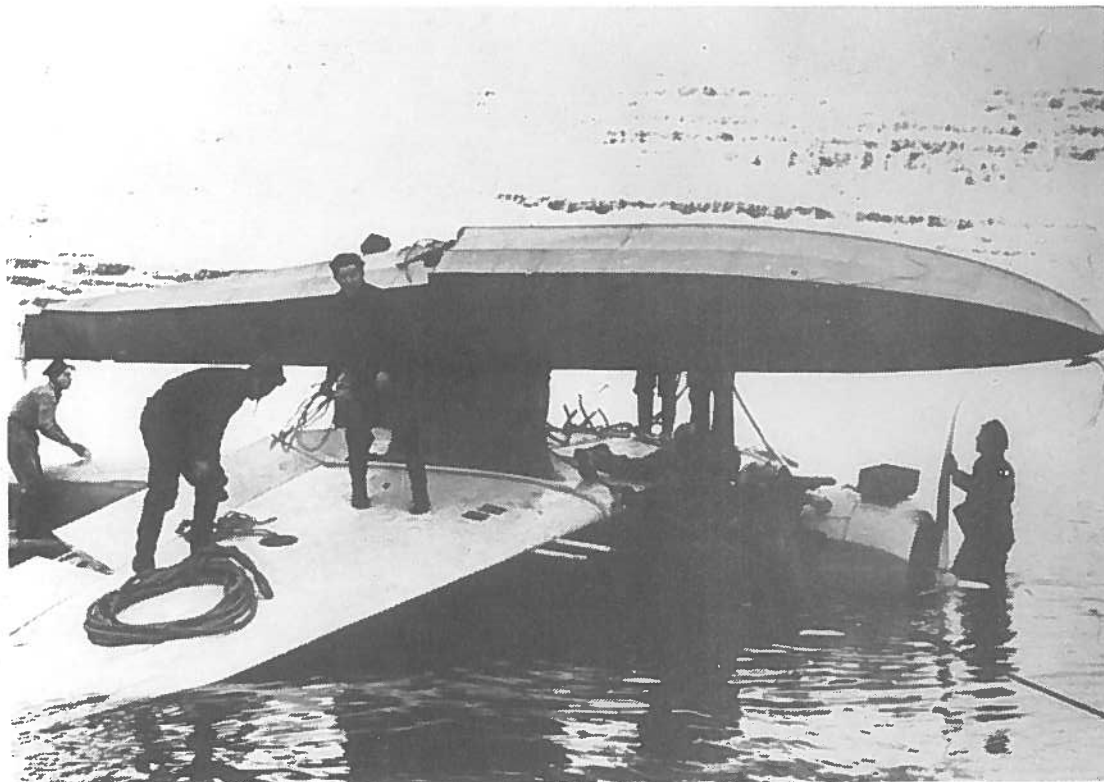
The insignia dates this picture to 1943 or later. Unfortunately, it is not possible to identify the specific aircraft. (Photo courtesy Northrop Aircraft)



GS-V some time between July 1941 (when squadron codes were issued) and November 24, 1942 when it crashed on takeoff. Note that this airplane carries a fresh-looking, single-color paint scheme on the upper surfaces. However, the floats are mottled, possibly with the under-surface color. This airplane carried a "----" (International Radio Code for the letter "V") on the forward portion of the starboard float; apparently in the same color as the code letters. (Photo courtesy Northrop Aircraft)



A bad day for the ground crew. Apparently the tractor bogged down in a soft section of the beach. GS-S was scrapped in January 1943. (Photo courtest Northrop Aircraft)



This gives some indication of what an accident can lead to. The starboard float is missing and the propeller is bent. Imagine the work that will be required to restore the radios, electrical equipment, and engine after this soaking in salt water. (Reed Olsen photo courtesy Northrop Aircraft)



anyone knew where to look for "lost" N-3PB parts, he would be the one.) Most of the airframe was raised, however the engine, one float, part of one wing, and some of the empennage were missing. On 9 November 1979, a RNoAF C-130 landed at Hawthorne (adjacent to the Northrop factory) with all that could be found of #320, the last N-3PB.

The second phase of the restoration project is now in process. Northrop has dedicated and walled off a portion of the factory floor for the N-3PB and the work of rebuilding is proceeding with volunteer labor. Some of the people who worked on it in 1940 have come out of retirement to work on it again. However, not all are old-timers, some of the team were not born when the airplane was built; they are using computer design techniques to design missing parts, techniques which were not even imagined in the 1940s! Current estimate is for rollout to occur in the Fall of 1980.

So the N-3PB story is not over yet.

#### ACKNOWLEDGEMENTS:

Mr. Leo Gay, a friend and co-worker for many years, for all his assistance in putting this article together.

Mr. Sveinn Thordarson, another friend and co-worker for his help and remembrances.

Mrs. Marge Bowser, for her typing and retyping assistance.

Proposal Group for final print.

Northrop Aircraft, Inc., for their support and pictures.

#### QUESTIONS:

Correspondence from people who have had contact with these airplanes is welcome for there are many details to fill in. For example, the Vancouver operation: Were these airplanes operational up there or was this another training site which was amalgamated into 'Little Norway'?

Gus Morfis  
4709 Greenmeadows Avenue  
Torrance, California 90505 U.S.A.

abstracts-abstracts-abstracts-abstracts-abstracts-abstracts-abstracts-abstracts-abstracts

Continued from page 6.

"Aviones de las Guerra - Hispano-Suiza E-30".

#229. Photos: Spanish Fokker F-27, Dutch F-16 J-259;

"Aviones de la Guerra - PWS 10".

#230. "El Avion y las Maqueta - Avia B534"; "Aviones de la Guerra - Hispanio E-34".

#231. Photos: Spanish Herrier 008, Dutch F-16 J-259;

"Aviones de la Guerra - Bleriot-Spad 91-6".

#232. Photos: Bolivian PC-7 FAB-450, 451, & 452;

"Valmet L-70" (photos and drawings of LEKO-70); "Un Programa Nacional para la Fabricaion de Material Aereo" (photos of Spanish CASA Azor, HA-200, & SF-5 211-55 and Egyptian HA-300); "Aviones de la Guerra - DH-60 Moth".

#233. Photos: Spanish Herrier 008; "Aviones de la Guerra - Savoia- Marchetti SM 55".

#234. Photos: Uruguay Hellcat A-401; "Aviones de la Guerra - Martinsyde F-4A".

Compiled by Bob Massey (SAFCH #364)

#### DE VLIEGENDE HOLLANDER

Feb 80. Photos: Dutch F.27M C-5 (color), Dutch F-16A J-215 (color).

Mar 80. Photos: Dutch C-47 X-2.

Apr 80. Photos: Dutch F-104G D-8098 (color), Dutch NF-5A's K-3027, 3049, 3013, 3034 (color), Norwegian F-104G 626 (color), Spanish AF DC-8 T1501 escorted by four Dutch NF-5's, Dutch SP-2H 218 and 217.

May 80. Photos: Fokker D.21's 241 and 219 - converted T-6's (color); F-16B's Dutch J-260, Beglian FB-02, Norwegian 301, & Danish ET-204; Israeli F-16B 001 (color).

Jun 80. Photos: Peruvian Navy F.27MP PH-MPA/561, Indian AF An-12 L-2171.

Jul 80. Photos: Dutch NF-5A K-3041 in red, white, & blue color scheme (color), Dutch TF-104G D-5814 (color), Spanish Navy F.27MP PH-EXD (color).

#### HERKENNING

Jan 80. Photos: Swiss Vampire J-1641, Pilatus P.3 A-830, Hunter TMk.68 J-4206, & Alouette III V-258; Dutch F-104G D-8331 with shark mouth; Alouette II of Dutch AF Grasshopper Team.

Mar 80. Photos: Danish F-104G R-707, F-100 formation, SAAB Supporters T-426 & T-427, TF-104G RT-654, S-61 U-276, Alouette III M-071, & C-130H; Greek C-130H 741; Tunisian SF.260W W41-503.

May 80. Photos: Greek C-47 34911, CNAF C-46 6261, Swiss Ju-52 A-702, Turkish C-54 ETI-581, SAAF Spitfire

W-5518 on display, Colombian F-47 FAC-861 on display.

Sep 80. Photos: Irish AC HS.125 236, Danish Lynx S-134 & S-142, Quatar Commando QA-22, Norwegian F-16A 275.

#### BRITISH AVIATION REVIEW (including ROUNDEL)

Nov 79. Photos: RAN A-4's N13-154906 camouflaged & N13-154905 non-camouflaged, Portuguese AF T-6 1656 & 1657, Indian AF Canberra BF-600, Egypt AF Meteor F.8 1419, Syrian AF Meteor F.8 414, Israeli AF Meteor FR.9 212.

Dec 79. Photos: Spanish AF Mirage IIIDE Cell-27. A list of Belgian F-84G serials with ex-USAF identities.

Jan 80. Photos: Spanish UH-1H Z108-40 & SNJ-5 C6-135; Swiss AF PC-7 A-902. Article on Rhodesian AF serials.

Feb 80. Photos: Tunisian AF SF.260W W41-505/TS-TBR, Libyan AF CH-47C LC-016.

Mar 80. Photos: RAAF Mirage IIIO A3-80, Mexican AF Jet Ranger II EBRE-1162, Benin AF C-130H TJX-AD, Haiti AF Baron 1251. Article on Indian Navy Sea Hawks and serials.

Apr 80. Photos: Columbian AF Arava FAC-952.

May 80. Photos: Indian AF C-47 VP-908, Indian Navy Sea Hawk IN-158, Panamanian AF Falcon 20 HP-1A.

Jun 80. Photos: Swedish AF C-47 79008/798, Belgian AF T-33 FT-01.

Jul 80. Photos: Indian Navy Sea Hawk IN-188 (painted black) and IN-238, Kenya AF Hawk 1003/G9-456, RNZAF F.27 NZ-2781.

#### FLASH

Jan 80. Photos: Portuguese T-38A 10915.

Feb 80. Photos: ex-Belgian AF Pembroke N-51962.

Article with photos of Dutch military display a/c.

Jun 80. Photos: Formation of Dutch NF-5's with Portuguese T-38's & F-86's!

Jul 80. Photos: Spanish AF F-5B AE9-018.

SOUTH EAST AIR REVIEW. (For the modeller of aircraft this magazine would be of little use. However, for the collector of serials of foreign military a/c this magazine is invaluable. For example, all that has been published in SAFO about F-5 and T-38 could easily be amended and corrected with information from SEAR.)

Feb 80. Photos: Venezuelan AF King Air 200 2840.

Apr 80. Photos: Jordanian AF C-130H 344, Egyptian AF C-130H 1283/SU-BAP, Yemen AF C-130H 1150, Irish AC Gazelle 237.

Compiled by Ben Marselis (SAFCH #143)





Royal Norwegian C-130 unloading the remains of N-3PB #320 at Hawthorne, California. This C-130 is normally used to support the UN peace-keeping units in the Middle East, hence the UN markings. This airplane arrived at the Northrop factory 9 November 1979 and departed three days later. (Photos courtesy Northrop Aircraft)

## THE LA CIERVA C.30 IN SPAIN

### Part I - Naval Air Service

(Editor's note: This article, written by Juan Arraez Corda, European Editor for PUCARA, is another example of the excellent work done by the staff of PUCARA. The SAFCH wishes to thank PUCARA and Georg von Rauch for their generous cooperation. A second part on the C.30 is Spanish Army service has been promised.)

Juan de la Cierva brought his C.30 autogiro G-ACIO to the San Javier Naval Air Base on 1 March 1934 for the purpose of demonstrating its unique abilities to the Spanish naval authorities. The demonstration flights, carrying as observers Capitan de Fragata Hermida and Florez, Commander Otero, and Teniente de Navio Jose de la Guardia, were a great success. To further demonstrate the utility of the autogiro, it was decided that the C.30 should attempt to operate from the deck of the seaplane carrier "Dedalo". The carrier was ordered to leave its usual station at Barcelona and to proceed to Valencia, where on 7 March, the C.30 landed and took off from the deck of the ship without the slightest difficulty. Highly impressed with this experiment, the Spanish Navy obtained an appropriation (authorized by a decree passed on 22 March) for the purchase of two C.30A's equipped with Genet Major 140-hp engines, metal propellers, and three-balded rotors for a total cost of 67,400 pesetas (roughly US \$14,000).

On 20 June 1934, orders were posted directing Capitan de Corbeta Florez, Tenientes de Navio Ceano Vivas, J.L. La Guardia, Solas, Lecuona, and Guitian to England where they were to receive training on autogiros. The 20-day course was given at the autogiro school in Hanworth (near London) by Sr. La Cierva assisted by two English pilots, Messrs. Jates and March. This training was completed on 31 July and all personnel returned to Spain except for Tenientes de Navio La Guardia and Guitian who remained behind to take charge of the two Spanish C.30A's and to deliver them to Spain. On 8 September 1934, the two autogiros, registered EA-SCA and SCB were tested and readied for the delivery flight. This trip was in four stages, one for each day: Hanworth-Le Bourguet was covered in 3 hr 3 min, Paris-Bordeaux in 4 hr 30 min, Bordeaux-Burgos in 3 hr, and Burgos-Getafe in 2 hr.

In Spain the C.30A's were stationed near Madrid, making frequent flights to San Javier with stop-overs at Albacete, where they would often over-fly the fleet based in neighboring Cartagena.

A Marxist uprising took place in Asturias in October 1934 and the pair of C.30A's, flown by La Guardia and Guitian were used for reconnaissance as well as dangerous liaison flights into the encircled cities of Gijon and Oviedo. On these latter flights, they often carried Liuet. Col. Yague, who had been assigned by the central government to crush the rebellion. Both C.30A's were hit by small-arms fire and received other sundry damage, but they never had to abort a mission. They continued to operate with the government forces until the uprising was finally put down on 27 October.

In 1935 the pair of autogiros was transferred to San Javier where they formed the "Special Services and Liaison Escadrille", taking part in all fleet exercises and specializing in submarine spotting. In June of this same year, they participated in an air show at Barajas, and later in the month they visited the Portuguese base at Amadora to demonstrate their capabilities to the Portuguese Minister of the Navy.

Shortly thereafter, while performing at a festival in tribute if the Spanish armed forces in Barcelona, the rotor of EA-SCA snapped and the resulting forced landing severely damaged the fuselage of the aircraft. A new fuselage and rotor were procured and EA-SCA was repaired in January 1936, at which time it was ordered to Getafe Air Base where it was put at the disposition of the Commander in Chief of the Naval Air Arm. EA-SCB remained at San Javier for fleet spotting duties.

At the outbreak of the Spanish Civil War on 18 July 1936, both autogiros were in Republican territory and their pilots were assassinated. The autogiros would never fly again. When Getafe was finally taken by the Nationalists, the remains of EA-SCA were found, but these were beyond repair.

(Photos of Spanish Cierva C.30's are to be found on page 32. a. EA-SCB at San Javier, April 1935. b. EA-SCB in flight over tranquil water, May 1935. c. YI-3 of the Aeronautica Militar at Los Alcazares, 1935. All photos courtesy of Juan Arraez Cerda.)

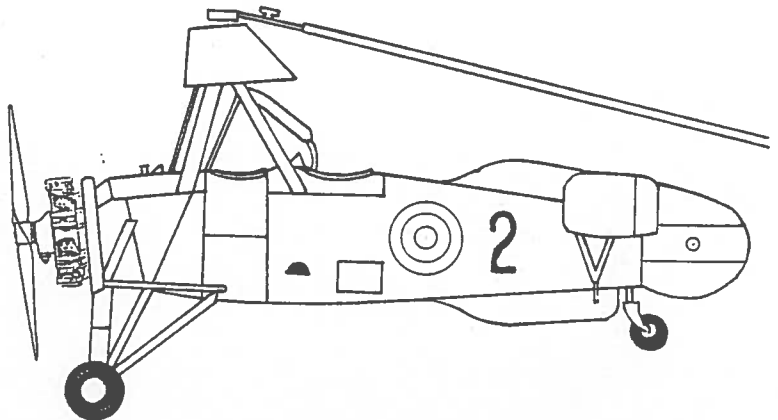
### ARGENTINE LA CIERVA C.30A

During the latter part of 1932, a La Cierva C.30A autogiro was imported into Argentina by J. Ayma of Buenos Aires. This aircraft, whose previous identity is unknown, bore the Argentine civil registration R-340 initially and LV-CEA later on. This particular La Cierva was sold to the Buenos Aires Chamber of Commerce (who had also obtained a Kellet K.2 autogiro, ex NC 11863), during November 1932 for advertising purposes.

R-340 was loaned to the army's "Escuela de Artilleria" for recce and artillery-spotting duties during the elaborate maneuvers held in the provinces of Cordoba and San Luis during October and November 1936, in which 22,00 men, 1200 vehicles, and almost 100 aircraft participated. The autogiro proved to be particularly useful in directing long-range counter-battery fire for the newly acquired Schneider 105 mm and 155 mm guns.

Satisfied with the performance of this aircraft, the "Comando de Aviacion del Ejercito" (CAE) ordered two La Cierva C.30A's (Avro 671's) late in 1937, and these were delivered in the following year. These aircraft, constructor's numbers 1031 and 1032 (CAE serials 1 and 2), remained in service well into the 1940's before being disposed of. One (c/n 1031) became LV-FBL and as such is preserved in the Museo Nacional de Aeronautica at the Aeroparque Jorge Newberry in downtown Buenos Aires.

(A photo of an Argentine C.30A appears as photo d on page 32. Photo courtesy of PUCARA.)



(Editor's note: The articles on this page were provided to the SAFCH by the Instituto de Investigaciones Aeronauticas Hispano Americano (IEHA), an organization dedicated to the study and preservation of Latin American aviation history. They have graciously offered to help SAFCH members engaged in writing articles for the SAFO on Latin American subjects. For further details contact: PUCARA, PO Box 1365, Highland Park, NJ 08909, USA.)

# THE CIERVA C.30 IN SPANISH COLOURS

The drawings show examples of the markings applied to Army and Navy machines used in Spain. All machines were finished in silver overall with no markings on the horizontal surfaces.

Fig. A: This machine carries the roundel on the fuselage sides in red and yellow without the usual purple centre. The rudder is also in two colours. It is assumed that this is one of the Army machines at the start of the Civil War and that it has had the purple painted over to conform with the Nationalist's colours. The code letters, which are in black, also seem to confirm its Nationalist ownership. Any information on this machine would be most welcome.

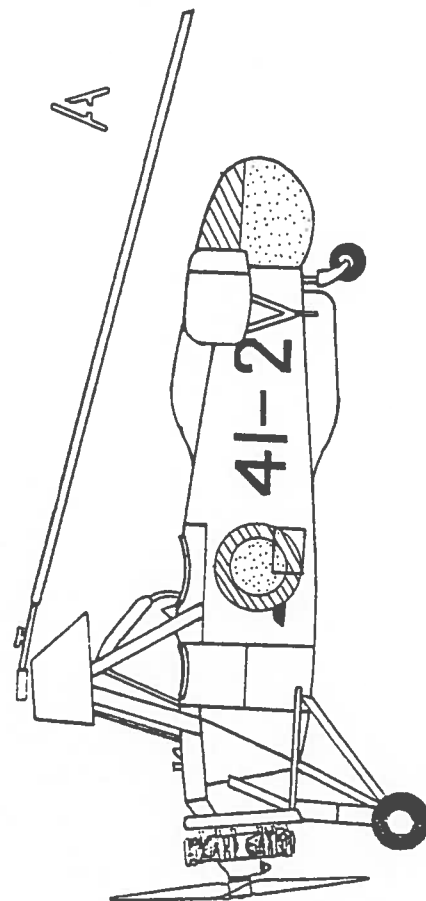
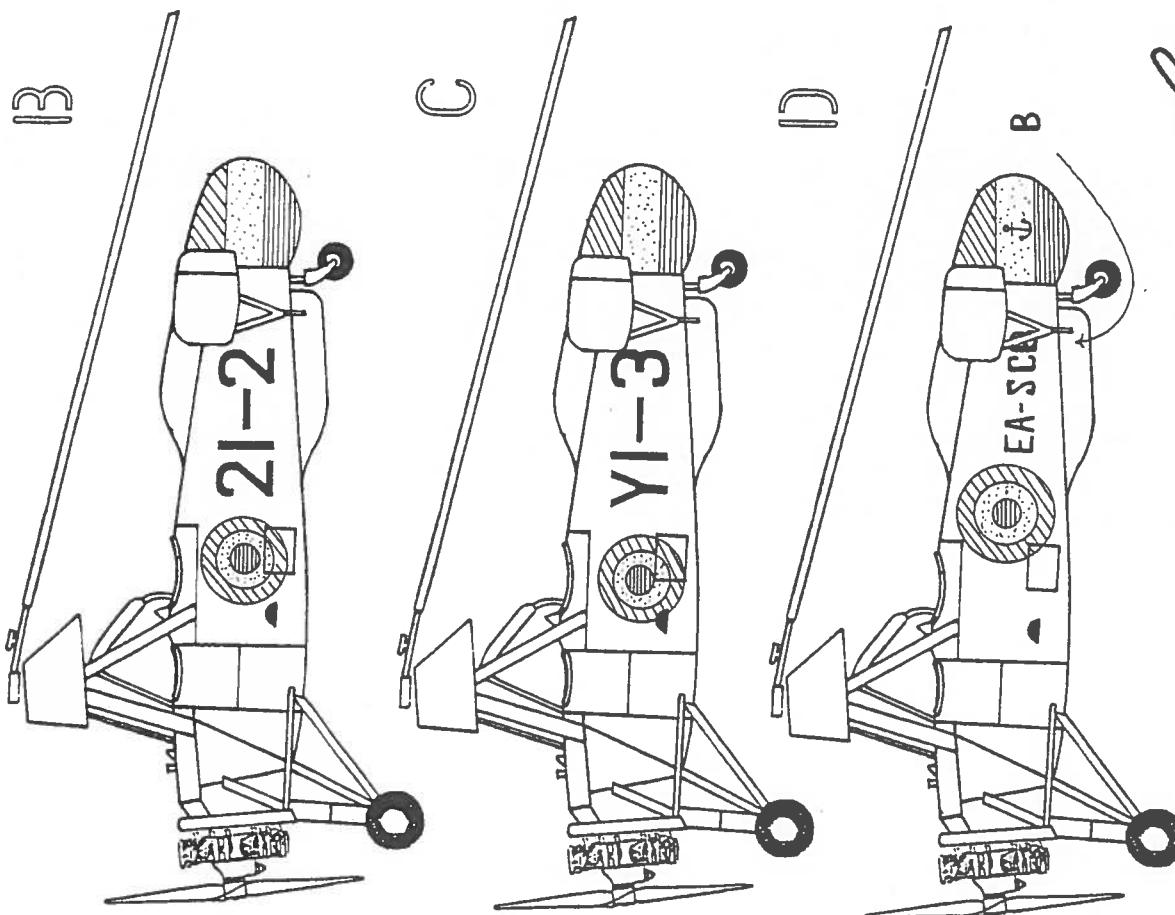
Fig. B: An Army machine attached to Groupe 21, a Breguet 19 unit, in 1935. The roundels are red, yellow, and purple as is the rudder. The codes are in black.

Fig. C: Another Army machine, also in 1935, this time attached to the Breguet 19 training unit at Cuatro Vientos.

Fig. D: One of the two machines used by the Spanish Navy. Both of these machines carried the same finish and were in Republican hands at the start of the Civil War. The drawing shows the red, yellow, and purple roundel and rudder stripes. The codes are in black. (The other machine was coded EA-SCA.) The anchor is also in black.

Bob Massey (SAFCH #364)

(Editor's note: This is part of a continuing study of the aircraft of the Spanish Civil War. Members wishing to help should contact Bob Massey, 108 Worrall Ave., Arnold, Nottingham, England. It is also a part of a continuing study of the Cierva C.30 in service with this small air forces; any member wishing to help with this project should contact Jim Sanders, 27965 Berwick Dr., Carmel, CA, USA.)

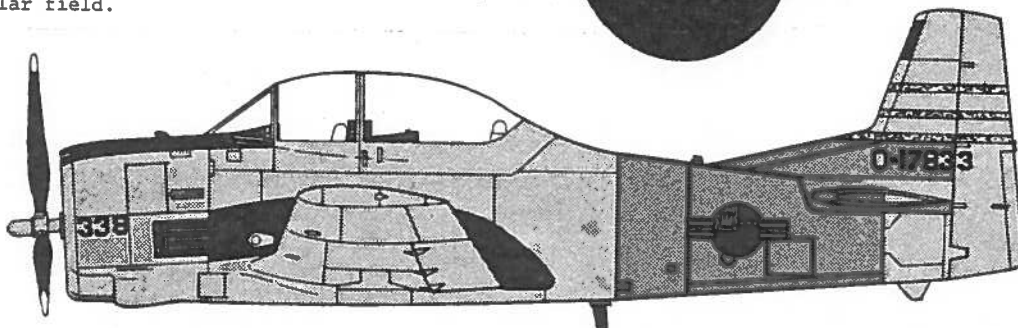
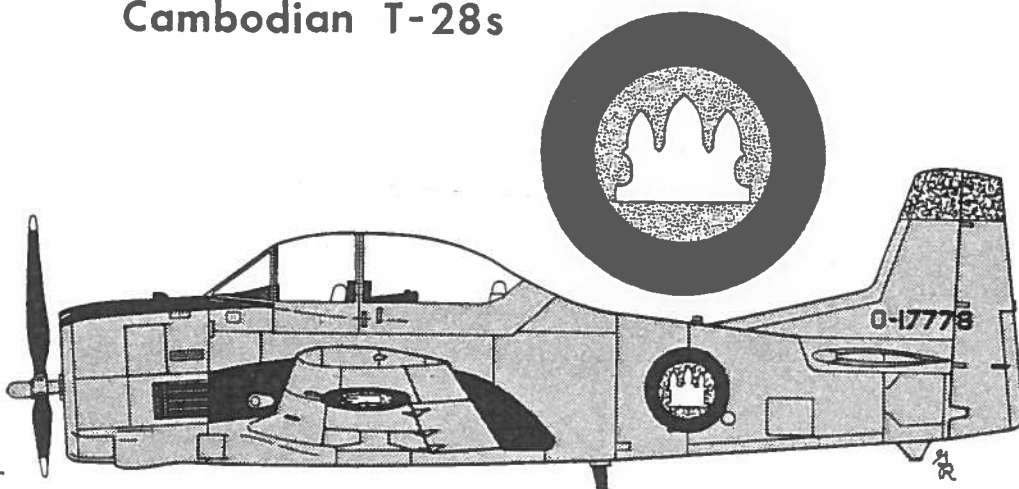


# van Hay's Notebook-

## Cambodian T-28s

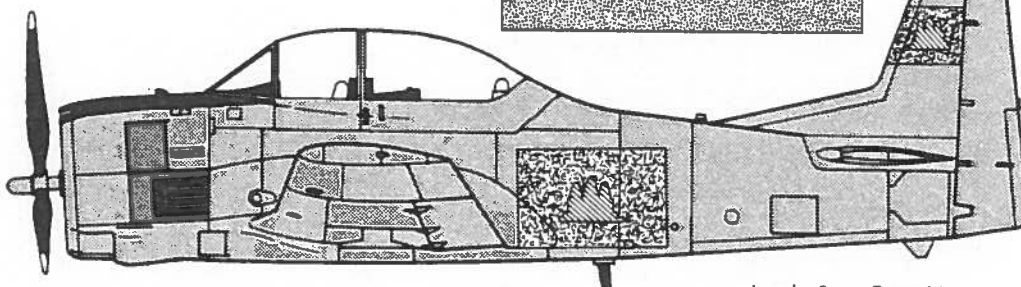
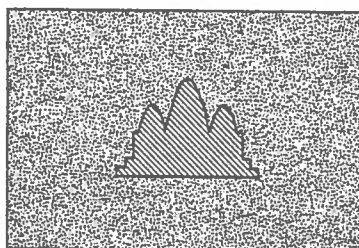
The recent history of the tormented land once known as Cambodia is represented here by the succession of insignia carried by the aircraft of its air force: (1) Upon achieving independence from France in 1955, the aircraft of the Aviation Cambodienne carried a representation of the temple at

Anghor Wat in white on a red disk surrounded by a blue ring. (2) After the overthrow of the "neutralist" government in 1970, the Aviation Nuhinak Khmire adopted an insignia imitative of the USAF. It consisted of a horizontal, blue bordered, white bar with a red stripe along the middle flanking a blue circle with 3 white stars in the upper right and a white Anghor Wat on a red field in the upper left. (3) In April 1975, after the victory of the Khmer Rouge, the Armée Revolutionnaire du Kampuchia used an insignia consisting of a yellow Anghor Wat on a red rectangular field.



The Institute of Strategic Studies' MILITARY BALANCE 1967-68 reports 15 T-28's in Cambodian service. This increased to 40 in their 1973-74 summary. The 28 August issue of FLIGHT reports that over 70 T-28's were in service at the time of the Khmer Rouge victory, but that some 50 were flown to Thailand. Many of these were returned and 17 T-28's are reported to have been destroyed by USAF strikes during the Mayaguez Incident.

All aircraft shown are overall light grey with red stripes on vertical fin and black exhaust areas and antiglare panels. References: (1) Photo from AIR PICTORIAL January 1968. (2) Photos from AVIATION NEWS. (3) Seen on the color T.V. program "Kampuchia Democrahque".



artwork: Greg Reynolds

# CAMBODIA

[កម្ពុជា]

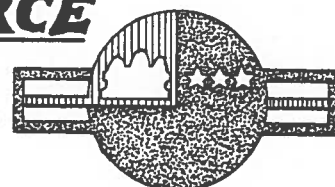
AIRCRAFT  
UNIFORM

## INSIGNIA

### KHMER AIR FORCE

(l'Armée de l'Air Khmère)

Although the aircraft depicted here shows no evidence of unit markings (at least on the view available), it is entirely likely that at least one of these unit emblems, worn by "Stallion" personnel, appeared on the aircraft, too—as that was the case with other KAF machines.



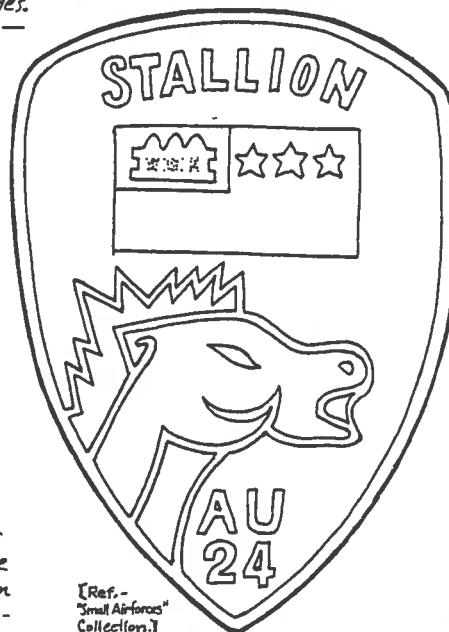
KAF (AAK) insignie  
1970-1975



(AT LEFT) Emblem of (armed?) reconnaissance unit, embroidered on a pale orange material. Bird and border in blue. Black and white eye; yellow beak and feet. Black binoculars with white outlines. White arrow(?) with black outline and green tip. [Ref. 'Small Airforces' collection.]

Below that, variation reported on salmon-colored silk. Other colors similar; no outlines. [Ref. - info. from Rex N. Clarke.]

(AT RIGHT) Light blue shield, with yellow border; letters and numbers. Horse's head is white with yellow outline/details; eye, nostril and mouth in red. The flag of the Republic is blue with red 1/4 segment, white temple and stars. The same symbols appear on the disc of the national insignie, superimposed on U.S.-style "bars". ((Representations of the temple towers of Angkor Wat have appeared on the flags and emblems of the KINGDOM OF CAMBODIA (pre-1970), the KHMER REPUBLIC (1970-1975), and the current DEMOCRATIC KAMPUCHEA.))



[Ref. - 'Small Airforces' Collection.]

(RIGHT) Variation from a Cambodian illustration - colors same as on cloth emblem.

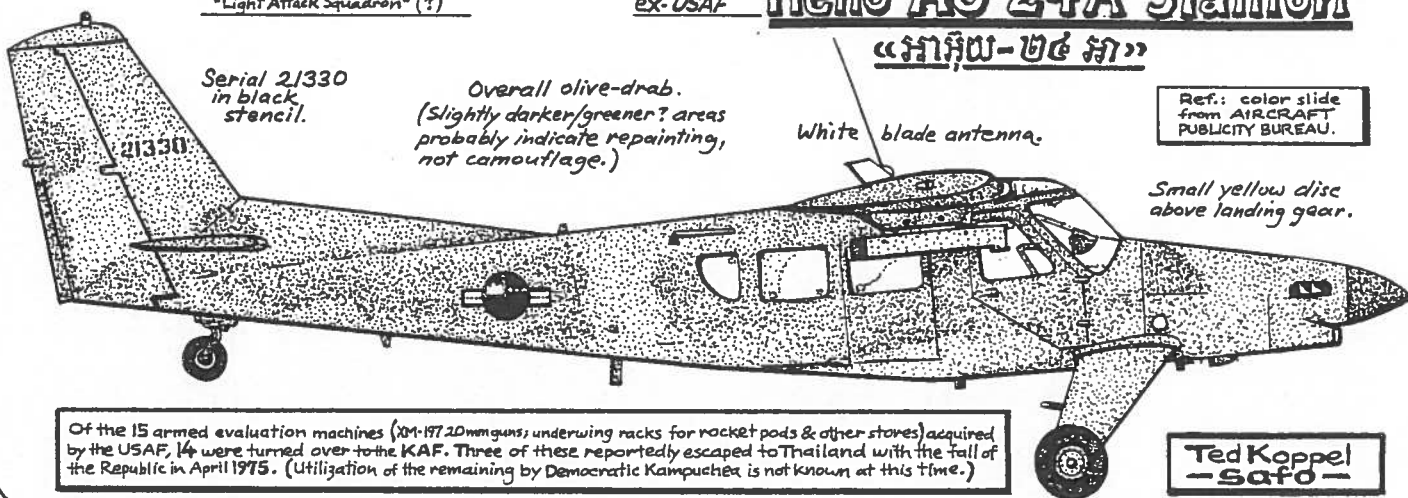


### ARMED RECONNAISSANCE GROUND ATTACK

ex- USAF

### Helio AU-24A Stallion

«អាក្រក់-២៤ អាក្រក់»



Serial 21330  
in black  
stencil.

Overall olive-drab.  
(Slightly darker/greener? areas  
probably indicate repainting,  
not camouflage.)

White blade antenna.

Ref.: color slide  
from AIRCRAFT  
PUBLICITY BUREAU.

Small yellow disc  
above landing gear.

Of the 15 armed evaluation machines (M-197 20mm guns; underwing racks for rocket pods & other stores) acquired by the USAF, 14 were turned over to the KAF. Three of these reportedly escaped to Thailand with the fall of the Republic in April 1975. (Utilization of the remaining by Democratic Kampuchea is not known at this time.)

Ted Koppel  
-safo-



(Editor's note: An article on the Fuerza Aerea Boliviana appeared in SAFO #13. The following additions and corrections were provided by Bram Risseuw SAFCH #396.)

MB-326GB - Despite the fact that many magazines and books reported the use of Brazilian-built MB-326GB by the FAB, I do not think that they are really in use. I have never seen photos or serial numbers. The Grupo de Operacoes Aereas Especiais at Rebore was reported as operating these aircraft, but this Grupo operates the Hughes 500M helicopters. Strange enough, there are now reports that 6 MB-326GB's were delivered recently by Aeromacchi, Italy.

Canadair CL-30 Mk.3 (T-33A/N) - Serials of first 13 are FAB-600 thru -612. At least 3 lost by 1977. The 5 more purchased during 1978 received serials FAB-615 thru -619. FAB-615, 616, 617, & 619 were observed 8 Feb. '79 at Cochabamba. It seems that the last five replaced the AT-6's in the Grupo Aereo Misto at Cochabamba. I have no reports of FAB-613 (unlucky?) and FAB-614. (Editor's note: The June '80 issue of JP4 reports that FAB-615 crashed on 80.02.21.)

T-6 Texan - Serials including FAB-321, -358, -359, and -362 (some or all without the "-").

Pilatus PC-7 - Delivered 1978. Serial FAB-450.

Siai-Marchetti SF-260 - Six delivered 1978. Serials FAB-180 thru -185.

Fokker S-11 (Brazilian T-21) - Eight acquired April 1972. Serials FAB-151 thru -158.

Bell UH-1H - About 5 delivered 1975.

SNIAS Lama - Five delivered 1979, but there are reports that others were delivered earlier.

Hughes 500M - Twelve delivered 1968.

North American B-25 Mitchell - Still in use. Serials 542 and 543 were observed 8 February 1979 at Cochabamba. Serial 541 observed at La Paz 9-2-79. Used as transports.

Lockheed L-188 - One acquired from Lloyd Aereo Boliviano in 1973; c/n 1125. First reported as TAM-69 but since May 1975 as FAB-01.

Lockheed C-130H - c/n 4744 delivered 18-07-77 as TAM -90; c/n 4759 delivered 18-10-77 as TAM-91. Transferred to Transporte Aereo Boliviano as CP-1375 and 1376. A third reported ordered.

Convair CV-440 - Six acquired in Spain 1972. TAM-41 thru -46. TAM-42 lost 21-12-73. TAM-? lost 27-10-75.

Convair CV-580 - At least three; TAM-70 (c/n 39), TAM-71 (c/n 370), & TAM-72 (c/n 41). Also reported c/n 328, 330, & 373.

Douglas C-54 - TAM-52 Lost 10-01-74. TAM521, 522, & 524 observed at La Paz 9 February 1979.

Fokker F-27 400M - TAM90 (ex PH-FTN, PH-EXL) c/n 10578 delivered 1-5-79. TAM91 (ex PH-EXM) c/n 10580 delivered 29-5-79. TAM92 (ex PH-FTM, PH-EXH) c/n 10584 delivered 17-4-79. Three more to be delivered in 1980; c/n 10599 thru 10601, serials TAM93 thru 95.

Douglas C-47 - Also in use serials 16, 17, 18, 24, 25, 27, 30, 32-36.

King Air 200 - FAB001A (Seen at La Paz 9-2-79). FAB002.

Learjet 25B and D - FAB-008 (delivered July '75) & FAB 010 (delivered December 1976).

King Air 90 - FAB-006 lost 26 April 1979.

Cessna 402 - 012 was lost 1 July 1978. Three reported including 003.

Cessna 421B - CB001 (Seen at Santa Cruz 7 February 1979). EB-1001 (Seen at Cochabamba 8-2-79).

FH Porter - First aircraft (c/n 2072) crashed, replaced by c/n 2070 (FAB-009).

Beech D18S - Three aircraft delivered during 1953 equipped with forward firing machine guns. More (3?) D18S or C-45's were acquired later. Known serials are 104 and 106 (both current March '74); 103 and 105 also reported but not confirmed.

Bell 47G - First of five in use as early as 1954. Serials N-01 thru N-05.

Bell 47J - One delivered 1957. Serial H-013. Two others may have been delivered earlier.

Bell 47J-2 - Two delivered 1961.

Bell 47J-2A - Two delivered 1966. (Bell 47's were used aboard Chilean warships. The total received is reported as 14.)

Grumman HU-16 - Total of 7 is possible. Only known serial is 257. Up to 14 HU-16A and HU-16B, including some converted to HU-16B/ASW, are reported used by the Chilean Air Force. Some could have been transferred to the Chilean Navy. One HU-16C was also reported in use with the Navy.

Sikorsky SH-34J - Three delivered 1965. Serials 51, 52, and ? (ex BuAir 150730, 150731, & 150732).

Douglas C-47 - In use as early as March 1969. Four serials known 121 thru 124. Total could be five.

Bell 206A - Four delivered 1970, one known as H-31. In use aboard frigates.

Piper PA-31-310 - C/n 31-733, serial 115 delivered 1971.

Alouette III (SA.319B) - Ten ordered 1977 and delivered between 30 August 1977 and 1 July 1978 by Aero-spatiale Helicopter Corp. USA. C/n 2297, 2312, 2322, 2332, 2342, 2353, 2362, 2368, 2369, & 2370.

Embraer EMB-110C(N) - Three delivered 1976; c/n 101, 102, & 108. Serials respectively 107, 108, & 109.

Embraer EMB-111A(N) - Six delivered 1978; c/n 147, 150, 154, 158, 162, & 166; serials 261 thru 266.

Beech T-34 Mentor - Total of six, of which last two were delivered 1966. Known serials 204 & 206.

CASA 212A - Two delivered August 1978 and two November 1978; c/n 134, 135, 137, & 141; serials 145 thru 147.

Pilatus PC-7 - Four delivered May 1980 with serials 210 thru 213.

Aircraft reported in use by the Chilean Navy, but which most probably never saw service.

North American T-28 - Four reportedly delivered 1968.

Convair PBV-6A - Three reportedly acquired from French Navy during 1973. It is possible that these planes were delivered to the Chilean firm Aeroservicios Parrague, which has PBV-6A's in use for forest-fire fighting duties.

Fokker F-27 MPA - Chile was interested in the F-27 Maritime, but never ordered one. The Dutch government declared on 29 October 1975 that, if an order was placed, an export license would be refused.

Sikorsky S-55, Bell HU-1D, Beech C-45 - The Chilean Air Force operated these types with Grupo 6 (based at Punta Arenas). During the 1970's many magazines reported these types in use by the Navy, but it is questionable if they really went to the Navy.

Lockheed SP-2E - It seems that 4 Neptunes were to be transferred during 1973, but it never happened.

Bolkow BO-105C - The 6 helicopters of this type were delivered not to the Navy but to the Carabineros de Chile.

Information for this list was obtained from Dan Hagedorn (SAFCH #394) and from various published sources.

Bram Risseuw (SAFCH #396)

The following members have been lost by their respective postal services. Any information on their present whereabouts would be greatly appreciated. Gerald Collins (Windsor, Canada), Ian Grant (Etobicoke, Canada), James Milton (Medley, Canada), Tom Rinearson (Toronto,

Canada); David Molyneux (Redland, England); Guillermo Jimenez Gonzalez (Mexico D.F.); Jose Nebrada (?); Steve Sexton (Paramount, CA), Lt. Tom Surlak, Charleston AFB, SC), & SSG Clement Wickett (Fort Lewis, WA); Mardonio Islas (Mexico D.F.).

"I also have some items that may be of some interest. In the November 1979 issue of the Nationalist Chinese publication Sinorama, there appeared a one page photo story on F-5Es that participated in the October 10th national celebrations that year. The F-5Es are in gray air superiority camouflage, but the most interesting thing about these planes is the unit insignia on their tails. It consists of a white "Plum Flower", highlighted with gold, which is imposed over a bright red chevron, which in turn, is over a blue-gray roundel with a white interior.

In the September 1979 issue of Soldier of Fortune magazine, there is an interview with one Mike Edwards (a pseudonym) who served with the Hungarian Air Force during the Uprising of 1956. He claimed to have shot down a Soviet MiG-15 while flying a Czech-built Avia S-199. I know that Hungary flew several kinds of Messerschmitts, but Avia S-199? Can this be confirmed?

In the November 1979 issue of New African there appeared a photo of an Ethiopian late-model MiG-21. This Fishbed, #1103, sports the yellow Star insignia of the new regime along with a desert camouflage of sand and light green.

"In a recent issue of Look magazine, there appeared a color photo of several Angolan Mi-8s flown by Cuban personnel. The helicopters are a faded olive green with individual numbers H-07 and H-12 in yellow, but no national insignia is visible.

"In the July 21, 1980 issue of Time magazine there was a photo of a line up of several ex-South Vietnamese A-37s now serving in the new Vietnamese Air Force. The flag of Vietnam is clearly visible on the nearest A-37. In a recent Egyptian magazine there was a series of photos showing the first EAF F-4Es. These F-4s were in standard USAF SEA camouflage with the national insignia at the rear of the fuselage (like Spain) but had their identifying numbers censored. However, in the July 28, 1980 edition of the New York Times there is a shot of some Egyptian Phantoms in what appears to be gray air superiority camouflage. Also, the national insignia is now located on the fuselage by the engine air intakes like Israel, Greece, or Turkey."

Denis Maloney (SAFCH #306)

"I have bought about a dozen slides through the Aviation Society of Africa newsletter. The slides are generally of excellent quality developed by Kodak. And they are originals. They cost about 43¢ U.S. and are really something different. I got a I.A.I. Arava of the Swaziland Defense Force as well as several SAAF aircraft and helicopters, including a Mirage F1 (a real beauty). My only gripe is the postage and especially the length of time involved. The last order took about two months. But, if you like the unusual and don't mind the time or cost, I recommend them."

Tommy Kay (SAFCH #239)

"I am doing research on the Seversky 2-PA model 204 Guardsman in Swedish service, 1940-1953, and would like to hear from SAFO'ers with an interest. The aircraft served in Sweden as the B6 and with the U.S. Army as the AT-12 advanced trainer. It was developed from the better-known Seversky single-seat fighter which served as the J9 in Sweden, the P-35 in the U.S.

"I have considerable material on the Swedish Air Force and would be glad to share it with anyone who can help with my first interest - color slides of F-4 Phantom II aircraft in all services. I have been searching for more than five years for a color slide or any sort of illustration of the thirteenth Phantom built, F4H-1 bureau number 145312, which made its first flight in February 1960, was used by General Electric at Edwards AFB that spring, and was stricken from the U.S. navy roster in July 1960."

Robert F. Dorr (SAFCH #444)

"I have enclosed a copy of the latest issue (#246) of the weekly WINGS which includes color photos of many of the Omani aircraft detailed in SAFO #15. Note that the Skyvan and Beaver are camouflaged in a sand and what appears to be a dark green and not two-tone brown as noted on the SAFO cover. Also note the camouflage pattern on the BN Defender which appears to be somewhat at variance with the pattern drawn in SAFO.

"The Hunter photo in SAFO is repeated in this magazine in colour; visible in the colour photo are the Arabic numbers for '835' on the rear fuselage. The area near the nose and fuselage insignia has been repainted; these are probably were the original Jordanian markings were covered.

"Also note the photo of the Kuwaiti TA-4KU with the avionics pack. I may be able to get details on the camouflage pattern of these Kuwaiti Skyhawks. If I do, I'll pass it on. It appears similar to the Israeli scheme, except it is a two-tone scheme instead of three."

Harry Margulies (SAFCH #264)

Editor's note: WINGS: THE ENCYCLOPEDIA OF AVIATION IN WEEKLY PARTS is an impressive publication. The only issue of this series I have seen is #146 covering "Persian Gulf & India". This issue consists of 24 pages (22.5 by 30 cm) containing 32 color photos, two color side-view drawings, and one color 5-view drawing. Color reproduction is uniformly excellent. Photos include the following: Saudi Arabian Mirage & F-5F; Iranian Boeing 747, Fokker F-27-400M, CH-47C, Bell AH-1J, Sea King, P-3 Orion; Pakistan Cessna T-37C, Shenyang F-6, Alouette III, Bell 47G, Mi-8; Omani Defender, Skyvan, AB-206A, BAC 111-475, Strikemaster, Hunter, Beaver; Abu Dhabi AB-205A; Dubai Buffalo; UAE Caribou; Kuwait TA-4KU; Indian Gnat, An-12, Il-14, HJT-16, Constellation, Camberra. The color side views are of Iranian F-4 and F-5. Also included in this issue is an article on Charles Samson's Be-2a; this seems to be part of a series on "Aeroplanes of the Great Pilots" and includes a color 5-view drawing of Samson's aircraft.

The subscription rate for WINGS is £12.25 for 26 issues and can be obtained by sending remittance to Wings Subscriptions, Punch Subscription Services, Watling St., Bletchley, Milton Keynes, Bucks. MK2 2BW, England. Back issues are 40p each post free from Wings Back Nos., Orbis Publishing Ltd., 20/22 Bedfordbury, London WC2N 4BL England.)

"Just got some prints in from AAVS, and there are three of interest to SAFCH members: 90217AC T-33A Thai 1014 taxiing on 3 Dec. '55; NMF a/c; 49492AC Superb air-to-air of four F8F-1 Bearcats, all Thai, on 8 Sept. '53; and 90215AC Bearcats of Thai AF on alert at Bangkok, 3 Dec. '55."

Dave Menard (SAFCH #16)

(Editor's note: Requests for copies should be sent to 1361st Photo Squadron, Aerospace Audio-Visual Service, Depository Services Section, USAF, Arlington, VA 22202. The most recent price list I have lists 4x5 prints at \$0.75 and 8x10 prints at \$1.25. Research services are available at \$13 per hour.)

"I have the following information for the "Force Fact Finder" (SAFO #15): Hungary - Me-210 (RT Vol. 11, No.2), Bu 131 (RT Vol. 11, No.5). Yugoslavia - Ca.310 & 310bis, Ca.311, Croatian Ca.311M ("Gli Aeroplani della Caproni Aeronautica Bergamasca" Vol.2 by Rosario Abate; SM.79 (Dimensione cielo Immagini E4). Norway - Douglas DT-2 (NFF Profil No. 1 Norske Flyhistorisk Forening, Postboks 58 Kverner, Oslo 1). Sweden - Hampden (1939 James AWA). Spain - SM.81, D.510 ("L'Aviation Republicaine Espagnole" Docavia/Editions Larivier 8 by Patrick Laureau).

"Please add the following to the "requests": Latvia - Miles Magister & D.H. Rapide; Lithuania - Avro 626, Fokker D VII, Ansaldo SVA; Hungary - Potez 63 & Blenheim; China - Northrop 2E, DH Moth."

Paul Mears (SAFCH #270)

THE WORLD'S AIR FORCES, Gen. Editor: Chris Chant. Pub: David and Charles. (July 1979). 255 pages, 278 b&w photos, 172 line drawings (side view only).

This large format book consists of alphabetically arranged brief air force entries (normally one paragraph each), of the "3 interceptor sqns with 40 MiG 21" type, but of variable accuracy (note that aircraft subtypes are rarely mentioned), plus the missiles used by that country in similar vein. Additionally most entries contain a haphazard selection of aircraft specifications (though these are fairly detailed) with, for instance, the C-47 found in the Angola section, and the An-26 found under Yugoslavia; most such entries being illustrated by either a black and white photograph or a side view line drawing. or both. The printing of the photographs is of high quality, but the markings of the majority of the aircraft shown bare little or no relation to the air force sections which they illustrate.

AIR FORCES OF THE WORLD, various authors. 263 pages, 250 colour photos, 150 b&w photos, 25 maps, 75 2-view silhouettes. Salamander Books £9.95.

The quality of this comprehensive book can only be described as superb. This book is in three sections: 20 pages of airbase maps of all countries except the USSR and China (PRC); 210 pages of air force data; and 25 pages of side and underside silhouette drawings of the major aircraft types of today, each with brief specification and users list.

The air force entries are grouped geographically and consist of a brief history, inventory details, and a data table showing units (if known), aircraft type used, role, quantity, and other notes.

Colour reproduction of the photos throughout the book is excellent and the subject themselves well chosen. Photos of special note include: Brunei Bell 206, Somali An-24, Cameroon Caribou, Rwanda Islander, plus many more.

Small colour representations of each air force's insignia accompany each section, but some of these are out of date, and the Sierra Leone, Malawi, and Mozambique insignia are not shown. (Does anyone know what these look like?)

The only detraction that I can find is that the USA section does not have a USN/USMC "data table", only USAF coverage being provided.

AIR POWER, Editor: Antony Robinson. Publisher: Orbis Books, (July 1980). Price unknown. 300 pages, 40 b&w photos, 425 colour photos, 64 colour side views.

This heavily illustrated book is a complete reprint of the weekly publication WINGS (The Encyclopedia of Aviation) volume 10. But in its own right it is a detailed study of the world's major air forces (major because only 70 out of the world's 130 air forces are covered), the main emphasis being on US, NATO and European air forces.

Coverage of each air force varies from one whole chapter for the USAF to one paragraph for Oman. Colour reproduction throughout is excellent and all of the colour side views were especially drawn for this volume. Data tables are included for the larger air forces, detailing: units equipment and bases (quantities of each aircraft type will have to be found in the accompanying text), but no data tables are included from page 222 onwards, the information is in the text though!

Notable photos in this book are: Greek F-4E, Yugoslav Il-18, Bulgarian An-24, Chinese (PRC) Trident, Brazilian PBY, Tanzanian Caribou, plus many others including a superb selection of ten Singapore AF aircraft and units insignia colour photos.

THE ENCYCLOPEDIA OF WORLD AIR POWER, Bill Gunston. 384 pages, 800 colour and b&w illustrations. Hamlyn-Aerospace £15.00.

This bulky book is also divided into three sections: The World's Air Forces (49 pages), The World's Military Aircraft (350 pages) and The World's Air-launched Missiles (18 pages).

In addition the text of the air force section is also based on that of the Flight International 1978 Special, updated here and there; but all the illustrations are new and a large colour representation of each air force insignia is included (except Sierra Leone, Liberia, Mozambique and Laos) though it must be noted that these are more up-to-date than those in the Salamander book. The countries are again grouped geographically.

The aircraft section is comprehensive to say the least, in alphabetical order from Aermacchi AM3C to Zlin 326, each entry is illustrated with either a three-view drawing or a colour side view(s) or a photograph or a combination of the three. Most (but not all) of the colour profiles have previously appeared in the Air International/Air Enthusiast magazines, as have the large Russian aircraft colour 3-views and the 17 cut-away drawings. Twenty large colour 3-view drawings of western aircraft are also included, of types ranging from the AH-1G helicopter via the Harrier to the F-15. Descriptive text and good specifications are included for all types covered.

The missiles section has a small amount of text and short specifications for each type plus the occasional colour photo.

Notable photos in this book include a Ugandan Piper Aztec, a Peruvian Mi-6, and a Zimbabwe Hunter with national insignia (sidetrack: considering the large number of foreign visitors during the recent Zimbabwe elections, why hasn't SAFO been flooded-out with ZAF articles?).

As an all-in-one book this is hard to beat, but it would need to be so at the asking price!

AIR FORCES OF THE WORLD, Barry C. Wheeler. 112 pages, 122 b&w photos, 6 colour photos. Ian Allan £4.95.

This book is Ian Allan's companion to Military Aircraft of the World, and is of similar size (but only half the thickness). The bulk of the book is a reprint of the Flight International magazine's 1978 World Air Forces Special, but this is backed-up by many well-chosen b&w photos including a Sri Lankan Convaair 440, Mauritanian Super Skymaster, Ivory Coast C-47, Congo Republic An-24, and many more. Colour photos include Argentine Navy Super King Air, Chilean A-37's, and Philippine AF F-5A.

The alphabetical entries in this book are short but detailed and accurate accounts of each air force's current status and future plans. A two page addenda appears at the end of the book. If you haven't got the Flight Special, this book is highly recommended.

Janes Pocket Book 24-AIR FORCES OF THE WORLD, by J.W.R. Taylor and Kenneth Munson. Publisher: Macdonalds and Janes, (July 1980). I have not obtained a copy of this book yet, but prices are softback £4.95 and hardback £6.50.

John Hayles (SAFCH #463)

NEW ZEALAND MILITARY AIRCRAFT AND SERIAL NUMBERS, compiled by C.F.L. Jenks. Soft cover, 36 pages (21 by 30 cm), 26 b&w photos. Aviation Historical Society of New Zealand (1980).

This book consists of a very thorough and cross-referenced list of serial numbers carried by every aircraft type operated by the RNZAF and its predecessors. The main section is a compilation of types arranged in alphabetical order by manufacturer with serial numbers broken down by mark number, followed by period of service, roles in which type was used, details of overseas service, and a general statement about the fate of the aircraft. Subsections include Aircraft Operated on Hire or Loan, Other Aircraft Brought on Charge, Aircraft not Brought on Charge (captured aircraft, aircraft written off before delivery, etc.), and Instruction Airframes. The middle section of the book consists of four tables on Aircraft Strength, listing the number of each aircraft type on strength each year since 1919. This section is a gold mine of useful information. For example from a total strength of 1346 aircraft on 31 December 1944, the RNZAF is down to 108 aircraft as of 1 April 1979. To find the RNZAF at a lower numerical strength than today one must go back to 4 September 1939, when the number was 102. Furthermore, today's complement consists of only 29 true combat aircraft (16 Strikemasters and 13 Skyhawks) while on 4 September 1939, there were 24 Baffin, 40 Gordon, 9 Vildebeest, and 16 Vincent which could be considered a combat aircraft. The final section of the book consists of New Zealand Military Serial Number Decode (to find aircraft type if serial number is known), Constructor's Numbers and Previous Identities, and Subsequent Identities.

The publisher states that this book is the "first fruits of an ambition for the AHSNZ to produce a definitive reference work on New Zealand military aviation."

The narrow scope of the material herein reflects the intention to produce complementary volumes in the near future." The book is an excellent beginning and we wish the best of luck. The price is approximately US \$5.00 from AHSNZ PO Box 12-009 Wellington, New Zealand. (Review copy supplied by E.W.Martyn SAFCH #47.)

"One of the principle problems I find in building model aircraft of small air forces is finding decals of national insignia. Over the past twenty years I have collected most new decals in 1/72 scale which have come to the market. The problem is that most are short run items and once the manufacturer has sold out his stock, that is the end of that particular decal. This of course makes one most hesitant to use the decals knowing they are irreplaceable.

"Happily to say ATP of PO Box 2891, South San Francisco, California, USA 94080 has solved this problem. Using an ATP clear decal which can duplicate these most rare decals on a color Xerox copier with about 95% accuracy, at a nominal cost. The clear decal is approximately \$1.25, and the cost of a color Xerox copy is about \$1.00, a small price to pay for having your cake and eating it too.

"I should add that one should also have a set of Pat Sedlocks decal sets of various sizes of roundels in various colors of 1501 Ridgewood Ave., Lakewood, Ohio 44107, to supplement some of the inherent faults of ATP duplications. Though Pat's decals are in roundel form, they can be trimmed to squares, triangles or stars (with much care).

"Another plus for ATP clear decals is that black drawings can be reproduced in six colors, letter and numerals can be reproduced in the same manner."

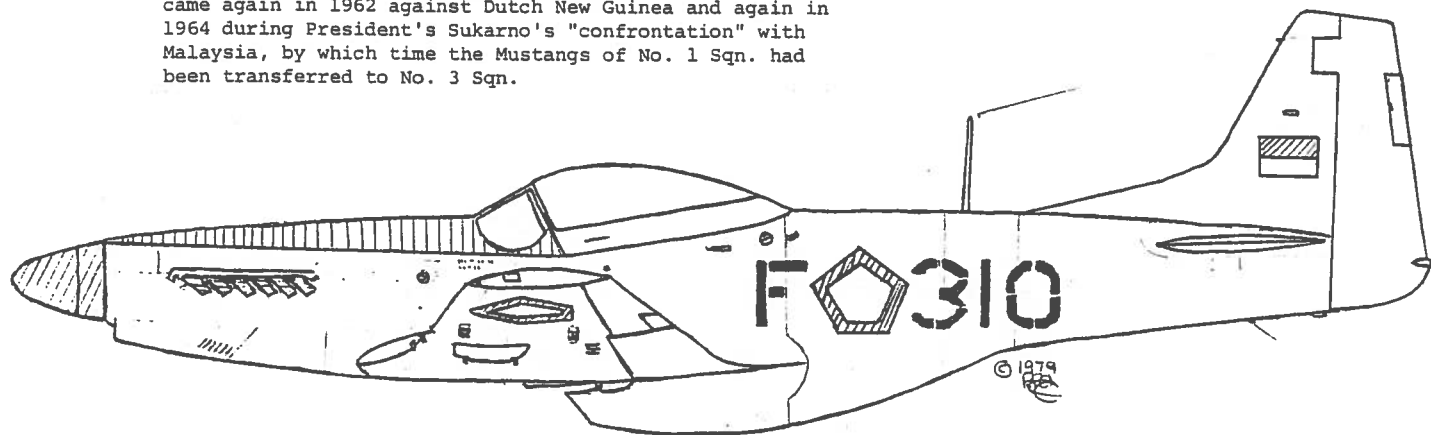
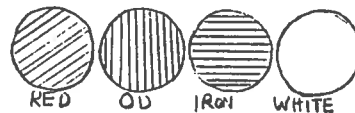
Hal Ahrens (SAFCH #216)

## CONFLICTS, COUPS, CRISES, AND CLASHES

# A Aurvey of Third World Air Combat from 1946 to the Present

No. 3. North American P-51D Mustang, No. 1 Squadron of the Angkatan Udara Republik Indonesia, ca. 1948.

In the years following it's independence, Indonesia was beset by numerous instances of internal strife. The most serious of these being the rebel revolt in Sumatra in 1958. The AURI's P-51s played a major role in the quelling, flying sorties against rebel positions as well as interdicting outside attempts of aid. Action came again in 1962 against Dutch New Guinea and again in 1964 during President's Sukarno's "confrontation" with Malaysia, by which time the Mustangs of No. 1 Sqn. had been transferred to No. 3 Sqn.



# AIRCRAFT OF THE SMALL AIR FORCES

## DENMARK

Aerospatiale Alouette III	62/76*	8
Agusta-Bell 47D-1	52/58	3
" " 47J Ranger	58/67	3
Airspeed Oxford I	46/55	44
" " II		
Avro 504K LB I	20/31	11
" 504N LB I	25/36	6
" 621 Tutor LB IV	32/40	6
" 671(Cierva) C.30 I M	36/40	2
Berg og Storm B & S III	12/14	1
Bleriot monoplane	15/15	1
Boeing B-17G Flying Fortress	48/53	1
Brequet XIVA2	20/27	4
Bristol 105D Bulldog I J	31/40	4
Canadair (Lockheed) CF-104 Starfighter	71/73*	15
" " CF-104D "	71/73*	7
Caudron G.III Cal	17/22	1
Consolidated PBY-5A Catalina	47/69	8
" PBY-6A Catalina	57/70	8
Curtiss F.B. VI	19/21	1
Dansk Aero Baby Falk	53/	
" " S.G. 38	49/57	1
" " 2G	49/	3
" Konstruktion DK I	16/16	1
" " DK II	16/24	1
deHavilland D.H. 60G Moth LB III	28/40	13
" D.H. 60M "		
" D.H. 82 Tiger Moth I S	33/40	15
" D.H. 82A " "		
" D.H. 90 Dragonfly III S	37/40	2
" Dragon II S	34/39	2
" Canada DHC-1 Chipmunk T.20	50/77	27
" " " T.21		
Donnet-Leveque Type A FB I	13/19	2
Dornier Wal 33 FM I	38/40	1
Douglas C-47A Dakota	53/76*	8
" C-54D Skymaster	59/77	5
" C-54G "	66/77	1
Elliotts EoN Olympia	50/	
Fairey Firefly TT.I	51/58	6
" P. 4/34 ?	39?/	
Flyvemot.tj. Polyt III	54/1	1
Fokker C.I	23/32	5
" C.V-B M/26 I R	25/40	18
" C.V-E M/33 II R	33/40	12
" C.V-E " III R	35/40	12
" D.VII	22/271	1
" D.XXI III J	38/40	12
" S.III	24/27	2
Friedrichshafen FF 29	17/17	1
" FF 49 HB II	19/26	7
General Dynamics F-16 (on order 76)		48
Gloster Gauntlet Mk.II IIJ	35/40	18
" Meteor F.4	49/57	20
" " F.8	51/64	20
" " N.F.11	52/59	20
" " T.7	50/63	9
" " TT.20	59/66	6
Grum-Schwensen Baby IIB	52/	1
" " SG. 38	52/57	1
H-maskinen	18/19	9
Hansa-Brandenburg W.29 HMI	19/29	16
Hawker Dancok LB II	26/37	15
" Dantorp HB III	33/40	2
" Hunter F.51	56/74	30
" " T.7	67/74	2
" " T.53	58/74	2
" Nimrod LB V	34/40	12
Heinkel H.E. 8 HM II	28/40	22
" He 114?	40?/	

Henri Farman H.F. 1/4	13/	4
" " H.F. 20	13/17	1
" " Kopi "Glenten" (Sevendsen)	12/13	1
Hughes H-6A Cayuse (500M)	71/76*	15
Hunting Percival Pembroke C 52/2	56/60	6
" " President Mk. 1	59/60	1
JyFly Baby IIB	49/60	2
Kramme & Zeuthen KZ IIT	46/55	15
" " KZ III	46/51	2
" " KZ VII Laerke	48/77	10
" " KZ X	53/55	12
Lockheed C-130H Hercules	75/76*	3
" F-104G Starfighter	64/76*	25
" TF-104G "	64/76*	4
" T-33A Silver Star	53/77	26
LVG B III	20/29	5
Macchi C.200?	40?/	
Maurice Farman "Ornen" M.F.1/4	13/22	5
Morane-Saulnier H (Thulin)	15/19	2
Nielson og Winther Aa	17/19	6
North American F-86D Sabre	58/66	60
" " F-100D SuperSabre	59/76*	48
" " F-100F " "	59/76*	24
" " Harvard IIB	46/59	31
" " III	47/59	10
" " T-6D Texan	50/52	20
O-maskinen I O	26/40	15
" II O	32/40	8
Orlogsvaerft F.B.II	14/19	4
" " F.B.III	15/20	8
" " F.B.IV	17/19	3
" " F.B.V	19/21	3
" " H.B.I	18/19	4
Percival Proctor II	45/51	6
" " III		
Piper L-18C Super Cub	57/77	16
Polytekn Flyvegr Baby IIB	50/	1
" " Polyt II	49/57	1
Potez XV A2	23/26	8
Republic F-84E Thunderjet	51/55	6
" F-84G "	52/62	238
" RF-84F Thunderflash	57/71	23
Rumpler B1	21/21	1
SAAB F-35 Draken	70/75*	20
" RF-35XD Draken	71/76*	20
" TF-35 " (5 on order 76)	71/75*	11
" T-17 Supporter	75/	32
Schleicher K. 7 Rhoadler	59/	3
" K. 8B	61/	1
" Ka. 6CR	60/	1
Schweizer TG-3	53/55	1
Sikorsky S-55C	56/66	7
" S-61A-1 SeaKing	65/76*	8
" S-61A-5 " "	71/	1
Sodertalje (Henri Farman) H.F.22	15/19	3
" S.W. 17	18/24	2
Supermarine Nanok	27	
" Sea Otter Mk. II	46/52	7
" Spitfire LF/HF Mk.IXe	47/55	38
" " HF XI	47/55	3
" " PR XI	47/55	3
Vickers F.B. 5	17/19	12

## DOMINICAN REPUBLIC

Aeronca L-3		
Aerospatiale Alouette II	73/76*	2
" " III	73/76*	1
Beechcraft C-45		
" T-11 Kansan	/73/76*	
Boeing B-17G Flying Fortress		
" PT-17 Kaydet		



Bristol Beaufighter Mk.X		10	Bristol Blenheim		
Cessna 170	/73	3	Bucker Bu181D Gomhuriah		25
" 172	/76*	4	Curtiss C-46 Commando		
Consolidated PBV-5A Catalina	/73/76*	2	" Tomahawk		
Curtiss 19R			Dassault Mirage III	/76*	38
" C-46 Commando	/73/76*	6	" " 5 (from Libya)	1973	
deHavilland Mosquito			" " F-1 (on order 1976)		44
" Vampire Mk. I, 50	/73/76*	15	deHavilland Dove		
" Canada DHC-2Beaver	/73/76*	3	" Gipsy Moth	31/	5
Douglas B-26	73/76*	7	" Vampire F.B.5		
" C-47	73/76*	6	" " F.B.52	53/	30
Hiller UH-12	/76*	2	" " T.55		
Hughes OH-6A	73/76*	7	" Canada DHC-1 Chipmunk		30
North American AT-6A, T-6G, Harvard	/73/76*	4	Fairey Gordon		
" " F-86F Sabre ?		25	Fiat G.55B	49/	
" " P-51D Mustang	52/76*	32	Gloster Gladiator		
" " T-28	/76*	6	" Meteor F.4		
Piper AE-1			" " F.8	53/	12
Republic P-47D Thunderbolt			" " N.F.13		
Sikorsky UH-19	73/76*	2	" " T.7	49/	2
Vultee BT-13			Gomhouria (Bucker?)	/76*	200

#### ECUADOR

Aerospatiale Alouette II	/75	4	" Fury		12
" " III	/76*	6	" Hart		
" Lama SA315	/76*	4	" Hurricane I, II	41/	
" Puma SA330	/76*	2	Hispano GTAF HA-200 Al-Kahira	/75	10
Ansaldo			" " (license mfg)	/75	90
Aviatik		5	Ilyushin Il-14	/73/76*	40
BAC-167 Strikemaster Mk.89	/75/76*	16	" Il-28, Il-28U	/73/76*	49
Beechcraft C-45	47/76*	6	" Il-38(USSR A/C in Egypt markings)	1975	
Bell 47G	73/76*	3	Lockheed C-130 Hercules (on order 1976)		6
Cessna 150 Aerobat	/76*	22	Macchi C.205	49/	
" 177	73	1	Mikoyan-Gurvievch MiG-15	/76*	88
" 180	73	2	" " MiG-15UTI	/73	
" A-37B (on order 1976)		12	" " MiG-17	56/76*	150+
" O-2	/75		" MiG-19	73/75	20
" T-41A	73/76*	20	" MiG-21	73/76*	200
Consolidated PBV-5A Catalina	47/76*	2	" MiG-21UTI	73	20?
Curtiss-Wright C-14R Osprey		1	" MiG-23	/76*	30
" " 16E		6	Mil Mi-4	73/76*	40
" " 19R			" Mi-6	73/76*	20
deHavilland Canada DHC-5 Buffalo (on order 76)		2	" Mi-8	73/76*	80
" " DHC-6	/76*	3	Miles Magister		
Douglas C-47	47/76*	12	Mraz M.1C Sokol		
" DC-6B	73/76*	4	North American Harvard + (C.C.F. Built)		
English Electric Canberra B.6	54/76*	6	Percival Q-6		
Fairchild M-62			P.Z.L. S.M.-1 (Mi-1)	/73	
" -Hiller FH-1100	73/75	1	Short Stirling		
" " Porter	73/76*	3	Sikorsky S.51		
Gabardini		10	Sukhoi Su-7	73/76*	120
Gloster Meteor F.R.9	54/76*	12	Supermarine Spitfire VB		
Hawker-Siddeley H.S.748	73/76*	5	" " IX		
IAI-201 Arava (6 on order 1976)	/76*	3	" " F.22	50/	22
Junkers Ju52/3M			Tupolev Tu-16D/G	73/76*	25
Lear Jet	/76*	1	Westland Commando(From Saudi Arabia)	/75/76*	24
Lockheed F-80C	73/75	10	" Lysander		
" T-33A	73/76*	12	" Sea King(From Saudi Arabia)	/76*	6
Meridionali Ro.37bis	38/		" Wessex	34/	1
North American T-6G, HA-16	/73		Yak-11	56/76*	25
" " T-28A	73		" -18	/73/76*	
Republic P-47D Thunderbolt	47/		Zlin 226	/73	
Ryan PT-20					
Savoia					
SEPECAT Jaguar A/B (on order 1976)		12			
Seversky P-35					
Short Skyvan 3M	73/76*	3			

#### EGYPT

Aero L-29 Delfin	73/76*		Beechcraft AT-11 Kansan	/73	
Aerospatiale SA341 Gazelle (on order 76)		42	" T-34A Mentor	54/73*	
Antonov An-12	73/76*	30	Boeing-Stearman PT-13A Kaydet		
" An-26	73	5?	Caproni-Bergamaschi A.P.1	39/	4
Avro 626	33/	20	Curtiss-Wright Osprey		
" Anson			Douglas C-47	/73	4
" Lancaster B.3			" DC-4	73	. 1
Beechcraft C-45			Fairchild PT-19		
			" -Hiller FH-1100	73/75*	1
			Fleet 10		
			North American (Cavalier) P-51D Mustang	73/75	10?
			" " T-6G Texan	/73	10
			SAML Aviatik		
			Vought F4U-5 Corsair	73	

#### EL SALVADOR

Vultee BT-13  
Waco F-2

# ETHIOPIA

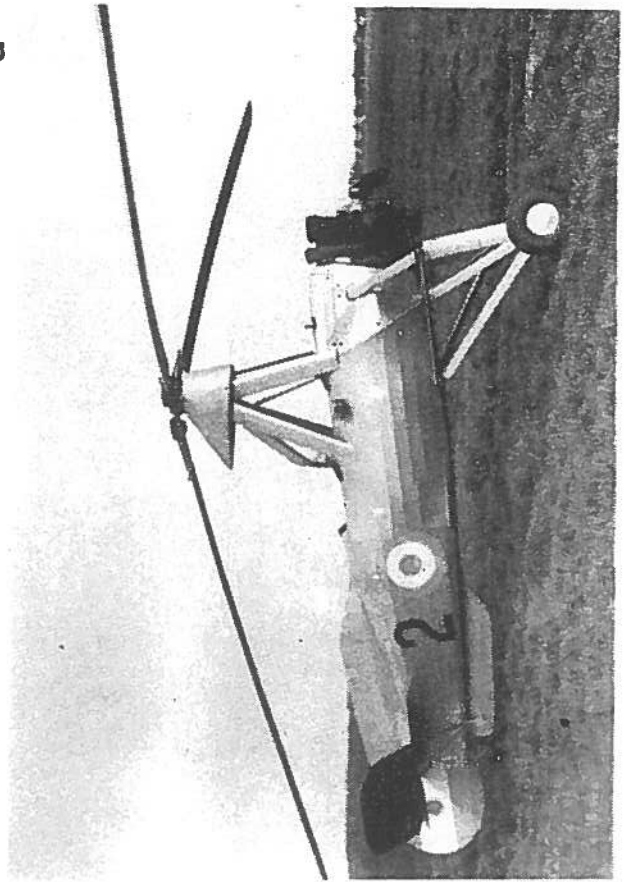
Aerospatiale Alouette III 73 5  
Agusta Bell A.B.204B 73/76\* 10  
Avro Anson 19  
Bell UH-1H 73/76\* 6  
Breda 1  
Cessna A-37B (on order 1976) 12  
" AT-17 Bobcat  
" C-310 (on order 1976) 15  
deHavilland Dove /73/76\* 2  
" Gipsy Moth 1  
" Tiger Moth 2  
Douglas C-47 /73/76\* 12  
" C-54 73/76\* 2  
English Electric Canberra B.2,B.52 73/76\* 4  
Fairchild C-119G,K 73/76\* 12  
Fairey Firefly F.1 52/ 9  
Ilyushin Il-14 73 1  
Lockheed T-33A 73/76\* 11  
Mil Mi-8 73/75 2  
Morane 1  
North American F-86F 73/76\* 11  
" " T-23A, D 73/76\*18+?  
Northrop F-5A,E (8 E's on order 1976) 73/76\* 16  
Potez 25 6  
SAAB-17A 47/ 66  
" -19A Safir 46/76\* 26  
" -91B 9  
" -91C  
Stinson L-5 Sentinel

# FINLAND

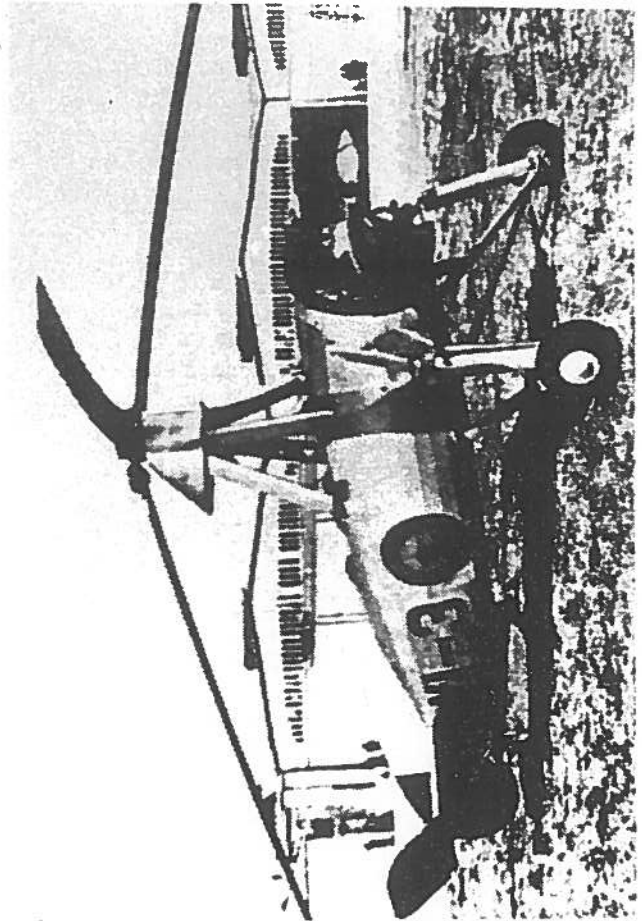
Adaridi 1  
Aero A.11 27/ 8  
" A.32 29/44 16  
Airspeed A.S.6 Envoy 42/43 1  
Arado Ar196A-3 43/44 3  
ASJA Jaktfalk J-6A 39/45 1  
" " J-6B 39/45 2  
Augusta-Bell 206A Jet Ranger 68/72\* 1  
Avro 652A Anson I 36/47 3  
Beechcraft C17L 40/45 1  
" " D17S 51/58 1  
Beriev MBR-2 41/42 5  
" MBR-2bis  
Blackburn Ripon IIF 29/45 1  
Brequet XIVA-2 38  
Brewster 239 40/48 44  
Bristol Blenheim I 37/58 30  
" " IV 40/58 12  
" Bulldog IIA 35/44 2  
" " IVA 35/44 17  
Caudron C.59 3  
" C.60 30  
" C.714 40/ 6  
" G.III 19  
Cessna C-37 Airmaster 39/43 1  
Curtiss Hawk 75A-1 41/48  
" " 75A-2  
" " 75A-3  
" " 75A-4  
" " 75A-6  
" Kittyhawk IA(P-40M) 43/45 1  
deHavilland D.H. 60X Moth 29/44 4  
" D.H. 82A Tiger Moth 40/44 1  
" D.H. 86B 40/ 1  
" Vampire F.B.52 53/65 6  
" " T.55 55/65 9  
" Canada DHC-2 Beaver 58/72\* 3  
Dessouter Mk.II 41/44 1  
Dornier Do.17Z-2 42/48 15  
" Do.22K-1 41/45 4

Douglas C-47 60/ 9  
" C-53 60/ 9  
" DC-2 40/56 3  
Fairchild 24J DeLuxe 39/41 1  
Fiat G.50 39/47 35  
Fieseler Fi156C-1 Storch 36/60 3  
Focke-Wulf Fw44J Stieglitz 40/60 35  
" " Fw58 Weihe 43/44 1  
Fokker C.VD 27/45 3  
" C.VE 34/45 16  
" C.X 36/58 4  
" D.X 1  
" D.XXI 36/ 97  
" F.VIIa 41/43 1  
" F.VIII 40/41 1  
Folland Gnat F.1 58/75\* 13  
Georges Levy Type R 19/ 12  
Gloster Gamecock II 2  
" Gauntlet II 40/45 24  
" Gladiator II 40/45 30  
Gourdou-Lesseure GL21 23/ 20  
Hanriot 232 41/45 2  
Hawker Hurricane I 40/44 12  
" " IIB 42/ 1  
Heinkel He115A-2 40/43 1  
Hover MF11 40/44 3  
Hunting Percival Pembroke Mk.53 56/68 2  
Ilyushin DB-3 42/45 4  
" DB-3F 40/45 11  
I.V.L. C.VI25 1  
" C.24 1  
" D.26 Haukka I 1  
" D.27 Haukka II 2  
" (Caudron C.60) 34  
" (Gloster Gamecock) 29/ 15  
" (Hansa Brandenburg W33)A.22 22/ 120  
Junkers F13 39/47 2  
" Ju88A-4 43/48 23  
" K.43 30/52 6  
" W.34 30/52 6  
Koolhoven FK52 40/43 2  
Lavochkin LaGG-3 42/45 3  
Letov S218A4 Smolik 30/45 10  
L.V.G. C.VI 2  
Martinsyde F.4 Buzzard 15  
Messerschmitt Bf109G-1 43/54 1  
" " G-2 47  
" " G-6 30  
" " G-8 3  
" " G-10 83  
Mikoyan-Gurviev MiG-15UTI 62/72\* 4  
" MiG-21F 63/72\* 19  
" MiG-21UTI 65/72\* 2  
Mil Mi-1 (SM-15Z) 61/66 2  
" " (SM-1W) 61/66 2  
" Mi-4 61/75\* 3  
" Mi-8 /75  
Morane-Saulnier Morko-Moranni 44/48 40  
" " MS50 6  
" " MS406 40/48 69  
" " MS410  
Nieuport 10  
" 23  
Nordiska Albatross B.II  
" " C.III  
petlyakov Pe-2 41/46 7  
" Pe-2FT 43/46 1  
Piper Pa-28-200 Arrow(on loan) /75 5  
Polikarpov I-15bis 40/45 5  
" I-16 40/43 6  
" I-153 40/44 22  
" U-2 (Pe-2) 41/45 4  
" UTI-4 41/42 1

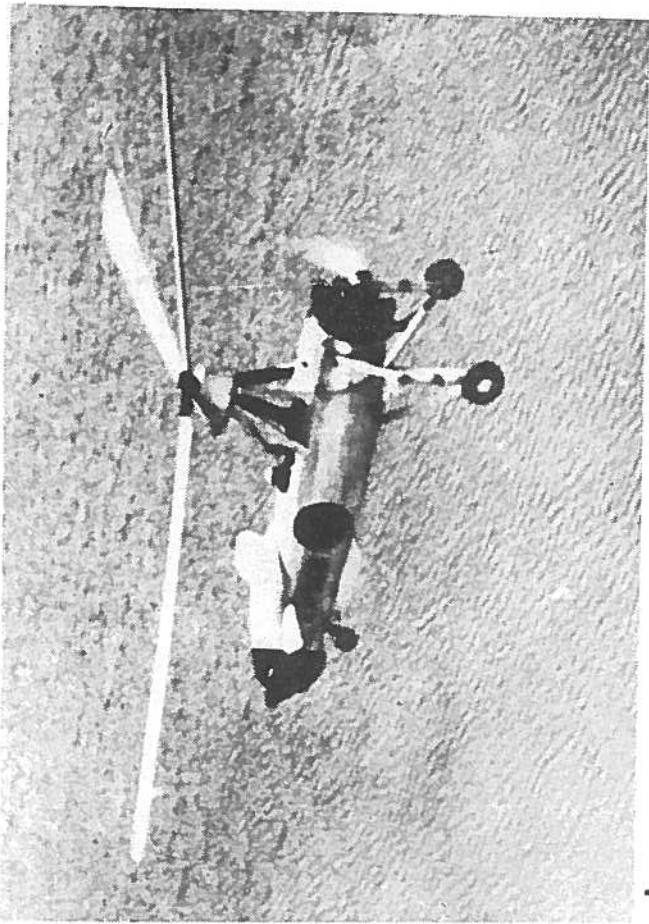
This is the fourth part of a continuing series on the aircraft of the world's air forces by Chris Thornburg. Anyone wishing to help Chris with this enormous job should write: Chris Thornburg, 4940 Mermaid Blvd., Wilmington, DE 19808.



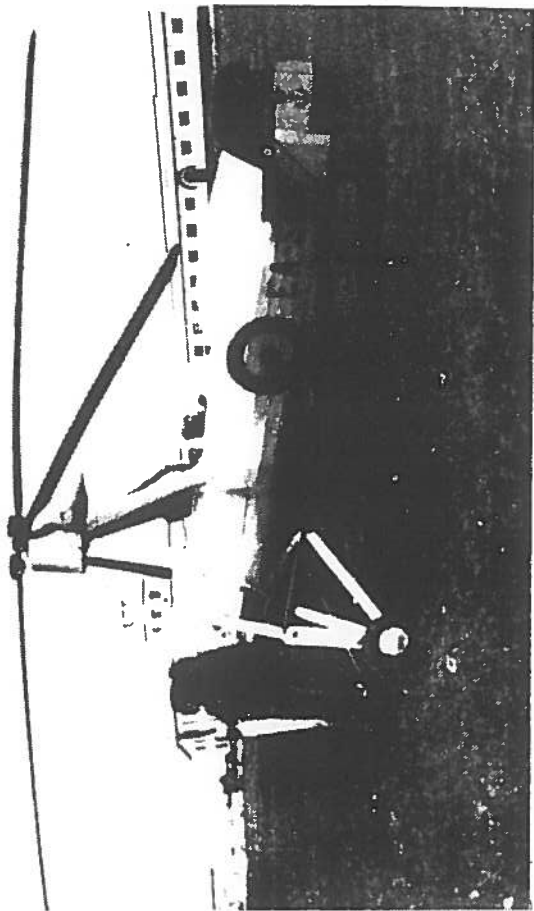
d



c



b



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